Office of Information Technology Services

E-Government Glossary

Administrative Services
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The year 2000 is proving to be a turning point for North Carolina state government. Building on lessons learned from the Y2K efforts, North Carolina has recently partnered with several private sector firms to deliver more efficient services to citizens, including high-speed Internet access to all areas in the state. In a related effort, ITS staff is working with three companies to deliver customizable portals for citizens, businesses, state employees, and local governments. Each portal provides a convenient, streamlined entry to digital government services for the user and cost savings for the state.

ITS has developed this *E-Government Glossary* to help employees understand and correctly use the new language of Internet-based government. The glossary is part of our effort to standardize usage for North Carolina's IT professionals in state government. An *E-Government Lexicon* has also been developed to provide a quick reference for spelling and capitalization for e-government terms.

Most commonly used terms

best practices	IT Procurement
CIO	LAN
database	metadata
dot-com	n-tier
DSL	NC @ Your Service Initiative
digital government	PIO
EBT	PKI
e-commerce	portal
EFT	protocol
EDI	private key
e-government	public key
e-mail	service-level agreement
enterprise management	TCP/IP
e-procurement	technical architecture
E-Rate	third party
intranet	WAN
ISDN	Web
IT portfolio-based management	wireless

The terms that are set in all lowercased letters are to be used as common nouns, that is, they do not refer to a specific person, place, or thing. Capitalization will change if you use one of the terms as a proper noun. Example: *intranet*.

> “An intranet often helps employees find information in a predictable location.”
> “The ITS Intranet can be used to do that, and much more.”

Use **e-government** when referring to transactions conducted by and for NC state government.

General terms

16-bit operating system – an operating system that can process 16 bits at one time

3-tier application – an application program that is organized into three major parts, each of which is distributed to a different place or places in a network. The three parts are the workstation or presentation interface, the business logic, and the database and programming related to managing it.

In a typical 3-tier application, the application user's workstation contains the programming that provides the graphical user interface (GUI) and application-specific entry forms or interactive windows. (Some data that is local or unique for the workstation user is also kept on the local hard disk.) Business logic is located on a local area network (LAN) server or another shared computer. The business logic acts as the server for client requests from workstations. In turn, it determines what data is needed (and where it is located) and acts as a client in relation to a third tier of programming that might be located on a mainframe computer. The third tier includes the database and a program to manage read and write access to it.

3270 terminal – also called a "dumb" terminal. A 3270 terminal consists of a monitor and a keyboard, is attached to a mainframe, and must be connected to a system network architecture (SNA) in order to function.

32-bit operating system – an operating system that can process 32 bits at one time

3GL (third-generation language) – programming languages such as BASIC, COBOL, FORTRAN, and C, which are one notch above Assembly languages

4GL (fourth-generation language) – programming languages such as Natural, Progress, PowerScript, and Passport, which are easier to use than 3GLs and use English-like commands

access control list – a table that tells a computer operating system what access rights each user has to a particular system object, such as a file directory or individual file. Each object has a security attribute that identifies its access control list. The list has an entry for each system user with access privileges. The most common privileges include the ability to read a file (or all the files in a directory), to write to the file or files, and to execute the file (if it is an executable file, or program).

access privileges – what you need to log on to most computer networks. Having access privileges means you have an account and a password that let you use a network.

access protocol – transfers e-mail from the message transfer agent (MTA) to the mail user agent (MUA)

ACD (automatic call distribution) – the routing of an incoming call to the next available operator

ad hoc queries – a method used by end users and applications to access a database in an interactive mode. Ad hoc queries usually require the end user to have knowledge of Structured Query Language (SQL).

adaptive system – a computer application system that can easily be modified to support unforeseen changes in the business process that the application supports

ADSL (**Asymmetrical Data Subscriber Line)** – ADSL is a technology for transmitting digital information at high bandwidths on existing phone lines to homes and businesses. Unlike regular dialup phone service, ADSL provides a continuously available ("always on") connection. ADSL is asymmetric in that it uses most of the channel to transmit downstream to the user and only a small part to receive information from the user. ADSL simultaneously accommodates analog (voice) information on the same line. ADSL is generally offered at downstream data rates from 512 Kbps to about 6 Mbps. A form of ADSL, known as Universal ADSL or G.Lite, has been initially approved as a standard by the ITU.

agents – intelligent programs, essentially macros, that facilitate movement across applications to execute user-defined tasks

AMS (**Applications Management Services**) – a branch within ITS' Business Technology Services. Formerly known as ADS, this branch develops and maintains software applications for state agencies.

ANCHOR-NET – a North Carolina Information Highway On-Ramp Network application. (1) The use to which an information processing system is put, for example, a payroll application, an accounting application, a network application. (2) A collection of software components used to perform specific types of user-oriented work on a computer. (3) Computer software that performs a business function (i.e., Microsoft Word is an application).

anonymous FTP (File Transfer Protocol) – a way to transfer files between computers on the Internet without needing a password. Universities, government agencies, and companies around the world have made files available to the public. To transfer files using anonymous FTP, you sign in on the other computer as "guest" or "anonymous" instead of using your real name. If someone tells you to use anonymous FTP and gives you the server name, just remember to use the word "anonymous" for your user ID. Usually, you can enter anything as a password.

ANSI (**American National Standards Institute**) – a voluntary non-profit organization that is the primary organization for fostering the development of technology standards in the United States. ANSI works with industry groups and is the U.S. member of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC). Long-established computer standards from ANSI include the American Standard Code for Information Interchange (ASCII) and the Small Computer System Interface (SCSI).

anti-virus software – a class of program that searches your hard drive and floppy disks for any known or potential viruses. The market for this kind of program has expanded because of Internet growth and the increasing use of the Internet by businesses concerned about protecting their computer assets.

application portfolio – the collection of integrated information systems (applications and components, purchased or custom-developed) required to satisfy business needs

APE (application package for the enterprise) – a group of applications designed to function across the enterprise

API (application program interface) – the specific method prescribed by a computer operating system or by another application program by which a programmer writing an application program can make requests of the operating system or another application. An API can be contrasted with a graphical user interface (GUI) or a command interface (both of which are direct user interfaces) as interfaces to an operating system or a program.

APM (advanced power management) – the ability of a portable computer to monitor and control its power consumption. APM puts your PC's screen or hard drive into "snooze" mode when you don't need them.

applet – generally, a small application written in Java

application architecture – a model that identifies criteria and techniques associated with the design of applications that can be easily modified to respond quickly to changing business needs

application communication middleware – middleware used to communicate between applications, software services, and software components

application development – the process of identifying the business need, designing an application system, and developing it with a computer programming language

application integration – the process of bringing data or a function from one application program together with that of another application program. Object-oriented programming technology makes application integration easier to achieve.

With traditional procedural programming, "bridge" programs had to be written so that one program could work with data or the output from functions in another program. The introduction of program "objects" such as Windows Object Linking and Embedding (OLE) custom controls and ActiveX controls provides standard interfaces so that objects designed for use in one application can be reused in other applications.

application program – a component of computer software that automates a business function. A SETUP.EXE file is an application program.

application server – hardware and software platforms dedicated to a specific type of application processing, groupware systems, custom business applications, or mail services. An application server is a server program in a computer in a distributed network that provides the business logic for an application program.

The application server is frequently viewed as part of a three-tier application, consisting of a graphical user interface (GUI) server, an application (business logic) server, and a database and transaction server. More descriptively, it can be viewed as dividing an application into a first-tier, front-end, Web browser-based GUI, usually at a personal computer or workstation; a middle-tier business logic application or set of applications, possibly on a LAN or intranet server; and a third-tier, back-end, database and transaction server, sometimes on a mainframe or large server. Older, legacy databases and transaction management applications are part of the back end or third tier. The application server is the middleman between browser-based front-ends and back-end databases and legacy systems.

application services – a classification for the business rule components of a service-oriented architecture

application software – a classification for software that performs a complete business function, for example, a word processor or a payroll system

application system – a set of application programs that completes an entire business process, for example, an accounts payable system

application-based – an adjective describing solutions that are addressed within an application

Archie – Archie is a program that allows you to search the files of all Internet FTP servers that offer anonymous FTP access for a particular search string. Archie is actually an indexing spider that visits each anonymous FTP site, reads the entire directory and file names, and then indexes them in one large index. A user can then query Archie, which checks the query against its index.

architecture – In information technology, architecture is a term applied to the process and the outcome of planning and specifying the overall structure, logical components, and logical interrelationships of a computer, its operating system, a network, or other conception. An architecture can be a reference model, such as the Open Systems Interconnection (OSI) reference model, intended as a model for specific product architectures, or it can be a specific product architecture, such as that for an Intel Pentium microprocessor or for IBM's OS/390 operating system.

Computer architecture can be divided into five fundamental components: input/output, storage, communication, control, and processing. In practice, each of these components (also called subsystems) is sometimes said to have an architecture.

archive – to move seldom-used files from your hard drive to tape cartridges or floppy disks. Archiving old files frees up space on your hard drive. If you ever need a file you stored, you can retrieve it from the tape cartridge or floppy disk.

ARP (Address Resolution Protocol) – a protocol within TCP/IP that is used for routing data packets in a distributed network

ASC (Accredited Standards Committee) X12 – the ANSI Electronic Data Interchange (EDI) standard

ASC (Accredited Standards Committee) X9 – the ANSI Financial Services standard

ASCII (American Standard Code for Information Interchange) – a standard code for representing English characters as numbers, with each letter assigned a number from 0 to 127. For example, the ASCII code for uppercase M is 77. Most computers use ASCII codes to represent text, which makes it possible to transfer data from one computer to another.

ASP (Active Server Page) – an HTML page that includes one or more scripts (small embedded programs) that are processed on a Microsoft Web server before the page is sent to the user. An ASP is somewhat similar to a server-side include or a common gateway interface (CGI) application in that all involve programs that run on the server, usually tailoring a page for the user. Typically, the script in the Web page at the server uses input received as the result of the user's request for the page to access data from a database and then builds or customizes the page on the fly before sending it to the requestor.

ASP (application service provider) – a third party that manages and distributes software-based services and solutions to customers across a wide area network (WAN) from a central data center. ASPs help companies outsource some or almost all aspects of their information technology needs.

Assembler – a low-level computer programming language similar to a computer's machine language and specific to each hardware platform. An Assembler program from one platform will not run on other platforms.

asynchronous processing – a method of communication that allows one program to send messages or data to another program without requiring an immediate response. Just as voice mail permits communication without requiring both parties to be available at the same time, requests can be placed in a queue and the other application has the flexibility to process the requests when it is ready (e.g., once a day, once an hour, or as they occur).

ATM (asynchronous transfer mode) – (1) A switching architecture that uses cell relay technology to carry vast quantities of data at extremely high speeds (2) A switching communications method that provides high-bandwidth capacity

ATM provides a universal transport method for both LANs and WANs and has the potential to remove the distinctions between them. ATM accommodates high bandwidth applications such as those used in multimedia, image, and video conferencing.

atomic-level data – transaction-level data containing much more detail than summary data. Atomic-level data addresses the business need to recast history.

authentication – the process of determining whether someone or something is, in fact, who or what it is declared to be. In private and public computer networks (including the Internet), authentication is commonly done through the use of logon passwords. Knowledge of the password is assumed to guarantee that the user is authentic. Each user registers initially (or is registered by someone else) using an assigned or self-declared password. On each subsequent use, the user must know and use the previously declared password.

The weakness in this system for transactions that are significant (such as the exchange of money) is that passwords can often be stolen, accidentally revealed, or forgotten. For this reason, Internet business and many other transactions require a more stringent authentication process.

The use of digital certificates issued and verified by a certificate authority (CA) as part of a public key infrastructure (PKI) is considered likely to become the standard way to perform authentication

on the Internet. Logically, authentication precedes authorization (although they may often seem to be combined).

authorization – the process of giving someone permission to do or have something. In multi-user computer systems, a system administrator defines for the system which users are allowed access to the system and what privileges of use (such as access to which file directories, hours of access, amount of allocated storage space, and so forth). Assuming that someone has logged on to a computer operating system or application program, the system or application may want to identify what resources the user can be given during this session.

Authorization is sometimes seen as both the preliminary setting up of permissions and the actual checking of the permission values that have been set up when a user is getting access. Logically, authorization is preceded by authentication.

AVI (Audio/Video Interleaved) – a popular file format that combines video and audio. To play AVI files, you need Video for Windows. Windows' CD-ROMs contain AVI files that the computer uses to display video images.

backbone – (1) A set of nodes and their interconnecting links providing the primary data path across a network (2) In a LAN multiple-bridge ring configuration, a high-speed link to which the rings are connected by means of bridges. A backbone may be configured as a bus or a ring. (3) In a WAN, a high-speed link to which nodes or data switching exchanges (DSEs) are connected (4) A high-speed computer network designed to interconnect lower-speed networks or clusters of dispersed user devices

bandwidth – (1) The speed or capacity of a network connection. The more bandwidth a particular medium has, the faster data can be transmitted. (2) The carrying capacity of a circuit, usually measured in bits per second (bps) for digital circuits or hertz (Hz) for analog circuits. The greater the bandwidth, the greater the information-carrying capacity. Bandwidth is comparable to the number of cars per hour a highway can support: a four-lane interstate highway has a higher bandwidth than a two-lane road.

best practices – methodologies that provide beneficial results. Some best practices are general in nature and can be applied to almost every industry; other best practices are industry-specific.

BGP (Border Gateway Protocol) – used for exchanging routing information between gateway hosts (each with its own router) in a network of autonomous systems. It is often the protocol used between gateway hosts on the Internet.

BI (business intelligence) – a broad category of application programs and technologies for gathering, storing, analyzing, and providing access to data to help enterprise users make better business decisions. BI applications include the activities of decision support, query and reporting, online analytical processing (OLAP), statistical analysis, forecasting, and data mining. Business intelligence applications can be mission-critical and integral to an enterprise's operations or occasional to meet a special requirement; enterprise-wide or local to one division, department, or project; or centrally initiated or driven by user demand.

Binary Executable Format – a computer readable format of an executable program. An executable program is compiled into machine-readable code.

BISDN (Broadband Integrated Services Digital Network) – a network technology that integrates interactive voice, data, and video by using cable TV's broadband channels and uses asynchronous transfer mode

booting – the process of loading a computer memory with instructions needed for the computer to operate. Remote booting refers to loading software over the network.

BPR (business process re-engineering) – an organizational process that helps to identify fundamental business objectives, formulate a detailed strategy to achieve those objectives,

determine measures for success, redesign business processes, and implement new policies and procedures

bps (bits per second) In data communications, bps is a common measure of data speed for computer modems and transmission carriers. As the term implies, the speed in bps is equal to the number of bits transmitted or received each second.

bridge – a network device that connects two separate networks. When a bridge is implemented, the interconnected networks resemble a single network.

broadband – (1) A frequency band broad enough to be divided into several narrower bands, each of which can be used for different purposes or be made available to different users (2) A high-speed, high-capacity transmission channel. Broadband channels are carried on coaxial or fiber-optic cables that have a wider bandwidth than conventional telephone lines, giving them the ability to carry video, voice, and data simultaneously. Cable modems and digital subscriber line (DSL) technologies are examples of broadband connectivity.

broadcast – the capability to send a single message from one device and be received by all other connected devices on a network

broker – application communication middleware that simplifies communications external to an application by providing common application program interfaces that can be used by any application to access shared services. The shared services can be deployed on multiple platforms and be written in different programming languages.

browser – (1) A software application that allows a user to view files available either locally or across the Internet. Two popular browsers are Netscape Navigator and Microsoft Internet Explorer. (2) Software that accesses and displays documents located on the Internet or an intranet

BTS (Business Technology Services) – the section within the Office of Information Technology Services that oversees, for its clients, software applications development, Web development, marketing services, and technical services convenience contracts

bus topology – a network LAN infrastructure in which all devices are connected in a line to a single cable. A bus network has two distinct ends: all devices on a bus network have equal access to it and can see all of the messages on the network.

business event – an occurrence that triggers a business rule. One example would be a motorist driving erratically triggers the business rule for "Traffic Stop."

business recovery – reactions to a sudden, unplanned event that enable an organization to continue critical business functions until normal business operations resume, such as facilities and local work items

business rules – fundamental units of work required to complete a business process. An application program can automate business rules.

CA (certificate authority) – an application program technology in PKI-based security systems that issues and manages security credentials and public keys for message encryption and decryption. A CA typically creates both public and private keys, embeds them in certificates, and provides them for storage in a smart card or the user’s local hard drive (private-key certificate) and in a directory (public-key certificate)

As part of a public key infrastructure, a CA checks with a registration authority (RA) to verify information provided by the requestor of a digital certificate. If the RA verifies the requestor's information, the CA can then issue a certificate. Depending on the public key infrastructure implementation, the certificate includes the owner's public key, the expiration date of the certificate, the owner's name, and other information about the public key owner.

cabling – the physical wire that connects a network

calendaring and scheduling – a technology that provides, by combining with an organization's overall groupware system(s), a methodology for coordination and communication of individual and group activities and plans

calendaring and scheduling front end – the application that runs on a user's desktop that allows the viewing and manipulation of calendaring and scheduling information

call center – a central place where customer and other telephone calls are handled by an organization, usually with some amount of computer automation. Typically, a call center has the ability to handle a considerable volume of calls at the same time, to screen calls and forward them to someone qualified to handle them, and to log calls. Call centers are used by mail-order catalog organizations, telemarketing companies, computer product help desks, and any large organization that uses the telephone to sell or service products and services.

carrier services – the various networking technologies offered by telephone companies as a service for wired and wireless communication

CD-ROM (compact disk-read-only memory) – high-capacity, read-only memory in the form of an optically read compact disk

cell relay – network technology based on the use of small, fixed-size packets, or cells. Cell relay is the basis for many high-speed network protocols.

centralized computing – a range of computing services offered from the same geographic location

Centrex (central office exchange service) – a service from local telephone companies in the United States in which up-to-date phone facilities at the phone company's central (local) office are offered to business users so that they don't need to purchase their own facilities. The Centrex service effectively partitions part of its own centralized capabilities among its business customers. The customer is spared the expense of having to keep up with fast-moving technology changes (for example, having to continually update their private branch exchange infrastructure) and the phone company has a new set of services to sell.

CGI (common gateway interface) – an application that enables an HTML document to call an executable program, pass information to it, and display the output in a dynamically created document. CGI scripts are used to count Web site hits, handle database queries, etc.

change management – process of planning, controlling, and managing enterprise system changes

CIC (customer interaction center) – The call center is evolving into a “new age” contact center. The CIC accommodates multiple channels for customer interaction and critical functions, including customer service/support, field service dispatch, quality management, intelligent routing, case-based reasoning, and knowledge repositories.

CICS (Customer Information and Control System) – (1) A general–purpose licensed program that controls online communication between terminal users and a database (2) A mainframe multi-user single address space subsystem from IBM that supports mainframe transaction processing programs

Over the past several decades CICS, together with the COBOL programming language, has formed the most common set of tools for building customer transaction applications in the world of large enterprise mainframe computing. A great number of the legacy applications still in use are COBOL/CICS applications. Using the programming interfaces provided by CICS, a programmer can write programs that communicate with online users and read from or write to customer and other records (orders, inventory figures, customer data, and so forth) in a database (usually referred to as "data sets") using CICS facilities rather than IBM's access methods directly. Like other transaction managers, CICS can ensure that transactions are completed and, if not, undo partly completed transactions so that the integrity of data records is maintained.

CIO (Chief Information Officer) – CIO is a job title commonly given to the person in an enterprise responsible for the information technology and computer systems that support enterprise goals. As information technology and systems have become more important, the CIO has come to be viewed in many organizations as a key contributor in formulating strategic goals. In many companies, the CIO reports directly to the Chief Executive Officer (CEO). In some companies, the CIO sits on the executive board.

In a large enterprise the CIO normally will delegate technical decisions to employees more familiar with details. The CIO proposes the information technology an enterprise will need to achieve its goals, and then works within a budget to implement as much as possible of the plan. Typically, a CIO is involved with analyzing and reworking existing business processes, with identifying and developing the capability to use new tools, with reshaping the enterprise's physical infrastructure and network access, and with identifying and exploiting the enterprise's knowledge resources.

Many CIOs head the enterprise's efforts to integrate the Internet and the World Wide Web into its long-term strategy and its immediate business plans. For ITS, the CIO is the head information officer for the state of North Carolina.

Class A LAN Support – a local area network (LAN) support arrangement that provides agencies with support on an ongoing subscription basis

class libraries – a collection of software object classes, or a set of pre-built and pre-tested software components that can be used as building blocks to develop applications. Class libraries are often provided by development tool vendors and may also be purchased from third-party vendors.

client – (1) A computer program that relies on services provided from another software module to complete its intended function. A client, as it relates to an n-tier client/server programming environment, is not a computer or a human being. (2) A human user of a computer application (3) A workstation attached to a server on a network

client contact point – instance where a client makes contact with the help desk organization when requesting support. This is usually a Level 1 area of a service desk organization.

client/server – (1) In TCP/IP, the model of interaction in distributed data processing in which a program at one site sends a request to a program at another site and awaits a response. The requesting program is called a client and the answering program is called a server. (2) A computing model where functionality is divided between software clients and software servers. Clients depend on the services provided by servers, such as another application, component, or database, to complete the intended function.

client/server network – the most efficient way to connect 10 or more computers in a network to share information. Two popular client/server systems are Novell’s NetWare and Microsoft’s Windows NT. The server is the central computer that stores everyone’s files. A client is any computer that can access the information stored on the server.

cluster systems – groups of interconnected, homogeneous processor computers and input/output systems acting as a single system. Cluster systems can be used to provide fault-tolerant operation. Other machines in the cluster continue processing if a single processor fails.

CMIP (**Common Management Information Protocol)** – a network management protocol that was designed to improve on SNMP's weaknesses. It utilizes the Open Systems Interconnection (OSI) protocol, which is more complete than the TCP/IP protocol used by SNMP. The use of the CMIP protocol can increase network resource requirements; for this reason, it has not been widely accepted or implemented.

CMM (Capability Maturity Model) – created by the Software Engineering Institute (SEI) to assist organizations in maturing their people, process, and technology assets to improve long-term business performance

coaxial cable – a network cabling technology. Coaxial cabling is generally used in small bus topology networks because it requires less cabling. Due to its slow speed, coaxial cable cannot support any of the high-speed network technologies.

COBOL (Common Business Oriented Language) – the second-oldest high-level computer programming language; a procedural, structured programming language

COLD (computer output to laser disk) – archival storage of computer-generated data within an optical storage system

common business service – a service that incorporates the logic for commonly used business rules or functions. A service can be reused and shared between application systems.

component – an executable service that incorporates the logic for a single business rule or function. A component can be reused and shared between application systems.

component testing suite – software that contains special programs needed for testing a component. It provides services for calling a component, entering sample input, and capturing sample output data in order to verify the results.

componentware – software designed to be a component in an N–tier application

conferencing and meeting – a technology that provides a means for geographically diverse individuals and groups to participate, in real time, in conferences and meetings

configuration management – the process of maintaining workstation and server configurations in a large enterprise

connectivity – the ability to send and receive information between locations, devices, and business services

content providers – While content provisioning is also outside the core competencies of portal product vendors, many enterprises want content relevant to their industry. Portal product vendors have partnered with content providers for this service.

contention – two or more users or programs vying for the same computing resource at the same time (e.g., memory, storage, bus)

cookie – a small file of information held on a client device, provided by an Internet host, containing information on the client and enabling the host to identify the user directly on subsequent visits

cooperative processing – a distributed computing method that requires two or more distinct processes to complete a single business transaction. Typically, cooperative processing programs interact and execute concurrently on different processors.

CORBA (Common Object Request Broker Architecture) – an architecture and specification for creating, distributing, and managing distributed program objects in a network. It allows programs at different locations and developed by different vendors to communicate in a network through an "interface broker." CORBA was developed by a consortium of vendors through the Object Management Group (OMG), which currently includes over 500 member companies. Both ISO and X/Open have sanctioned CORBA as the standard architecture for distributed objects (which are also known as components).

core services – a classification for the basic application infrastructure components of a service–oriented architecture, such as security, naming, and directory services

COTS (commercial off-the-shelf) software – describes ready-made products that can easily be obtained. The term is sometimes used in military procurement specifications.

CPI (continuous process improvement) – a methodology that incorporates management of business practices, workflow, skills, project/time and resources, metrics, software configuration, and reporting

CRM (customer relationship management) – CRM is an information industry term for methodologies, software, and usually Internet capabilities that help an enterprise manage customer relationships in an organized way. For example, an enterprise might build a database pertaining to its customers that described relationships in sufficient detail so that management, salespeople, people providing services, and perhaps the customer could access information. This information could match customer needs with product plans and offerings, remind customers of service requirements, and know what other products a customer had purchased.

cross-platform – a program available for more than one type of computer. For example, Microsoft produces the Word program for the PC platform and for the Macintosh platform. Using a cross-platform program makes it easier to exchange a document from one platform (computer) to another.

CS (Computing Services) – a section within ITS that maintains state-of-the-art equipment and operates the Customer Support Center for ITS and provides mainframe computer services, remote LAN management (MAPS Servers), ITS LAN management, and LAN technology assessment

CSC (Customer Support Center) – The Customer Support Center Level 1 is designed to assist clients with problems and/or questions related to the client's needs for all ITS services.

CSS (Cascading Style Sheets) – a Web page style sheet derived from multiple sources with a defined order of precedence where the definitions of any style element conflict. The Cascading Style Sheet, Level 1 (CSS1) recommendation from the World Wide Web Consortium (W3C), which is implemented in the latest versions of the Netscape and Microsoft Web browsers, specifies the possible style sheets or statements that may determine how a given element is presented in a Web page. CSS gives more control over the appearance of a Web page to the page creator than to the browser designer or the viewer.

CSS (Customer Support System) – an electronic incident and change management system used to track and resolve customer calls, internal incidents, and software and hardware system changes. The system uses the Vantive Help Desk software package. ITS shares this system with other agencies that volunteer to participate and set up their own business definitions and rules.

CTI (computer telephony integration) – using a computer connected to a telephone switch to issue call-routing commands; often used in call centers

CTO (Chief Technology Officer) – the executive who directs an organization in matters pertaining to technology

customer-oriented – an adjective describing software or services that are adapted to the customer. Typically, customer-oriented means "easy to use."

cyberspace – a word coined by science-fiction author William Gibson to mean the electronic space created when many computers are connected together. In the future, cyberspace could become a multi-dimensional experience, where you hear sound and speech and view and interact with 3-D objects.

cybertrust – belief that the information you provide online will remain confidential

daemon – an agent program, usually initiated at startup that operates in the background on a UNIX server, ready to perform an operation when required

DAP (Directory Access Protocol) – a set of X.500 protocols for accessing information directories and transferring the information—such as e-mail addresses—from the directory service to the mail user agent (MUA), message transfer agent (MTA), or another directory service

DASD (Direct Access Storage Device) – a device in which access time is effectively independent of the location of the data

data – factual information organized and used for transactions, analysis, and decision support

data access – the process of storing, searching, and retrieving data by computer applications and end users

data access middleware – communication middleware used for accessing a relational database in an n-tier application environment

data cleansing – used to clean up existing data stored in a database, including breaking data down into basic elements and transforming it based on standards

data communication – (1) Transfer of data among functional units by means of data transmission according to a protocol (2) The transmission, reception, and validation of data

data dictionary – defines the characteristics (i.e., formats and values) of each field in a database, enabling data to be used in a consistent manner. It is usually presented in a list format.

data hygiene – the process of cleansing data stored in a database. Data hygiene ensures that data meets the standards that have been set. Data hygiene is needed at multiple levels, including the data entry level and the data extraction and transformation level.

data integrity – accuracy, validity, and consistency of data, maintained according to a set of rules for modifying a database

data mart – a subset of a data warehouse. Where data warehouses are designed to support many requirements for multiple business needs, data marts are designed to support specific requirements for specific decision support applications (i.e., particular business needs). Data marts are typically considered a solution for distributed users who want exclusive control of the information required for their business need.

data mining – software that scans large amounts of data stored in data warehouses to reveal patterns or correlations. Demographic or behavioral information about people is often revealed through data mining. Data mining is the analysis of data for relationships that have not previously been discovered.

data model – specifies the data formats and the relationships of fields and tables in an application system. It drives basic database design.

data processing – the systematic performance of operations upon data, for example, arithmetic or logic operations on data, merging or sorting of data, assembling or compiling of programs

data repository – a database that contains metadata, or information about data that is stored in a database (e.g., federated data definitions, data aliases, where OLTP and OLAP data can be found)

data review board – a committee consisting of key business users from across the enterprise. The data review board provides and maintains federated data definitions and promotes the reuse of data across the enterprise.

data visualization – the method of displaying data resulting from end user queries and data mining from a data warehouse in a visual or pictorial manner (i.e., graphs, pie charts, bar and line charts). Similar to data mining, data visualization can be helpful in realizing trends or patterns in interrelated data.

data warehouse – a data warehouse is a collection of data designed to support decision making and analytical processing. Data warehouses contain a wide variety of data, usually from multiple data sources, presenting a comprehensive view of a particular business environment. Due to the nature of the data stored in a data warehouse, the size of the data warehouse is usually very large, so it requires special design and planning.

database – (1) A collection of data with a given structure for accepting, storing, and providing, on demand, data for multiple users (2) A collection of interrelated data organized according to a database model to serve one or more applications (3) A collection of data fundamental to a

system (4) A collection of data fundamental to an enterprise (5) Collections of data arranged so it is easily retrieved by users and applications

database server – hardware and software platforms dedicated to database access

DB – database

DBMS (database management system) – software and data storage facility that organizes and manages data storage, structure, access, and security; can either be relational or non-relational

DCE (Distributed Computing Environment) – Open Software Foundation's standard, offering distributed file, remote procedure call, security, naming, and X.500 directory services to participating computers

DCS (Distributed Computing Services) – a business unit within ITS' Computing Services that provides LAN Assistance, Internet and Web Development Services, Managed Platform Services (MaPS), Statewide Computer and Network Security (SCANS), Novell Directory Services, and Domain Name Services

decryption – the process of converting encrypted data back into its original form so it can be understood

de facto standard – a standard that has emerged due to extensive use of a particular product or solution

deployment – the implementation of a software program or component on a particular platform

desktop publishing – the process of composing copy, including graphics and images, on an end-user workstation. Output can be sent directly to high-resolution reproduction equipment (e.g., phototypesetters, laser printers)

DHTML (Dynamic Hypertext Markup Language) – a collective term for a combination of new HTML tags and options, style sheets, and programming that will let you create Web pages more animated and more responsive to user interaction than previous versions of HTML. Much of dynamic HTML is specified in HTML 4.0. Simple examples of dynamic HTML pages would include (1) having the color of a text heading change when a user passes a mouse over it or (2) allowing a user to "drag and drop" an image to another place on a Web page. Dynamic HTML can allow Web documents to look and act like desktop applications or multimedia productions.

digital cash – Digital cash is a system of purchasing cash credits in relatively small amounts, storing the credits in your computer, and then spending them when making electronic purchases over the Internet. Theoretically, digital cash could be spent in very small increments, such as tenths of a cent (U.S.) or less. Most merchants accepting digital cash so far, however, use it as an alternative to other forms of payment for somewhat higher price purchases. There are several commercial approaches to digital cash on the Web. Digital cash can also be stored on an electronically sensitive card (smart card).

digital certificate – an electronic document issued by a certificate authority that is used to establish a company's identity by verifying its public key

digital government – electronic government; government services available online to citizens, employees, and businesses

digital innovation – the merger of business drivers and emerging technology in the digital economy

digital network – a network or line in which the information is encoded as a series of ones and zeros rather than as a continuously varying wave—as in traditional analog networks. Digital networks have several major pluses over analog ones. First, they're "cleaner." They have far less noise, static, etc. Second, they are easier to monitor because you can measure them more easily. Third, you can typically pump more digital information down a communications line than you can analog information.

digital signature – a digital signature (not to be confused with a digital certificate) is an electronic rather than a written signature that can be used by someone to authenticate the identity of the sender of a message or the signer of a document. It can also be used to ensure that the original content of the message or document that has been conveyed is unchanged. Additional benefits to the use of a digital signature are that it is easily transportable, cannot be easily repudiated, cannot be imitated by someone else, and can be automatically time-stamped. A digital signature can be used with any kind of message, whether it is encrypted or not, simply so that the receiver can be sure of the sender's identity and that the message arrived intact. A digital certificate contains the digital signature of the certificate-issuing authority so that anyone can verify that the certificate is real.

directory service – one or more databases that store and manage distribution lists containing information like user identifiers, e-mail addresses, and network component addresses. Directory services are used by many different applications.

disaster recovery – (1) Reactions to a sudden, unplanned event that enable an organization to continue critical business functions until normal business operations resume, such as data center and other critical applications (2) Recovery plans and technology that ensure the continued operation of critical business functions when productivity is threatened by unforeseen circumstances

disk array – two or more hard disks interconnected to increase security, performance, or reliability

distributed computing – computing performed on geographically dispersed platforms connected via a network; also referred to as network computing.

distributed device management – a management approach enabling heterogeneous devices from different vendors to provide event, fault, and performance data using a common graphical user interface (GUI), a common set of application program interfaces (APIs), common console support, and reporting and data aggregation capabilities. Distributed device management provides a single view of devices included in a heterogeneous distributed computing environment.

distributed infrastructure – a foundation consisting of multiple applications exchanging data and information across a complex, heterogeneous environment

distributed systems management – the process of remote monitoring and management of servers, networks, databases, and applications. This process includes performance management, scheduling, access control, help desk support, user account maintenance, and change management.

distributed transaction – a computer transaction that requires the successful completion of multiple events on multiple systems before it can be completed. For example, when transferring money from a savings account to a checking account, the transaction involves both a debit and a credit. It is imperative that both parts of the transfer occur: (1) the withdrawing of funds from the savings account, and (2) the deposit into the checking account. All steps in the process must succeed; otherwise, no steps are allowed to succeed. A distributed transaction processing monitor ensures completeness of a complex distributed transaction.

DLL (Dynamic Link Library) – a library of shared executable functions that can be dynamically linked into a Windows application during program execution. The application code contained in a Dynamic Link Library is not coded and compiled into each application system that uses it.

DNS (domain name system) – the way that Internet domain names are located and translated into IP (Internet Protocol) addresses. A domain name is a meaningful and easy-to-remember "handle" for an Internet address. Maintaining a central list of domain name/IP address correspondences would be impractical; therefore, the lists of domain names and IP addresses are distributed throughout the Internet in a hierarchy of authority. There is probably a DNS server

within close geographic proximity to your access provider that maps the domain names in your Internet requests or forwards them to other servers in the Internet.

document management – a technology that provides more control and better management of computer-generated files. This technology adds enhanced file security, revision control, file descriptions, extended file names, and user access privileges to the basic file directory management features of the computer operating system.

domain name system server – software that provides the capability for a long or complicated TCP/IP network location to be accessed by a generic, short alphabetic name. It is basically a lookup service. It maps the generic alphabetic DNS name to its complicated TCP/IP location. (For example, a client can access a database by using the generic name "Summary." The DNS server accepts "Summary" and translates the address into "\\UX00001\SRV1\DBASE\DATAWAR.FIL". The client then is able to access the database). If the database location changes, the DNS configuration is changed, and no changes are needed to each client configuration.

dot-com – any Web site intended for business use and, in some usages, it's a term for any kind of Web site. The term is based on the .com that forms the last part of the address for most commercial Web sites. The term is popular in news stories about how the business world is transforming itself to meet the opportunities and competitive challenges posed by the Internet and the World Wide Web.

driver – (1) A program (and possibly data files) that contains information needed to run a particular unit, such as a plotter, printer, port, or mouse (2) A system or device that enables a functional unit to operate (3) A circuit that increases the signal current for sending data over long cables or to many other circuits (4) A circuit that sends small electronic signals to a device (5) Software that interacts with the operating system to control communications equipment and facilitate the transfer of information to and from the network. Examples include software needed to support printers, a pointer device, and other hardware.

DSE (data switching exchange) – the equipment installed at a single location to provide switching functions, such as circuit switching, message switching, and packet switching

DSL (digital subscriber line) – a technology for bringing high-bandwidth information to homes and small businesses over ordinary copper telephone lines. xDSL refers to different variations of DSL, such as ADSL, HDSL, and RADSL. If your home or small business is close enough to a telephone company central office that offers DSL service, you may be able to receive data at rates up to 6.1 megabits per second, enabling continuous transmission of motion video, audio, and even 3-D effects. More typically, individual connections will provide from 1.544 Mbps to 512 Kbps downstream and about 128 Kbps upstream. A DSL line can carry both data and voice signals and the data part of the line is continuously connected.

DTD (Document Type Definition) – SGML file containing document format definitions; needed to decipher format commands

e-auction – an online service where surplus inventory is sold

EAI (enterprise application integration) – EAI is a business computing term for plans, methods, and tools aimed at modernizing, consolidating, and coordinating the computer applications in an enterprise. Typically, an enterprise has existing legacy applications and databases and wants to continue to use them while adding or migrating to a new set of applications. These applications can help the enterprise exploit the Internet, e-commerce, extranets, and other new technologies.

EAI may involve developing a new total view of an enterprise's business and its applications, seeing how existing applications fit into the new view, and then devising ways to efficiently reuse what already exists while adding new applications and data. EAI encompasses methodologies such as object-oriented programming; distributed, cross-platform program communication using message brokers with CORBA and COM+; and the modification of enterprise resource planning (ERP) to fit new objectives, enterprise-wide content, and data distribution using common

databases and data standards implemented with the Extensible Markup Language (XML), middleware, message queuing, and other approaches.

e-business (electronic business) – the conducting of business on the Internet, not only buying and selling, but also servicing customers and collaborating with business partners

EBT (electronic benefits transfer) – a method of providing government benefits, such as cash assistance or food stamps, electronically instead of by paper. Beneficiaries are issued a card that can be used at certain automated teller machines (ATMs) to receive cash and point-of-sales (POS) terminals to purchase goods. EBT substantially cuts down on fraud and abuse in government benefit programs and provides safety and convenience to recipients who use the cards.

e-cash (electronic, or digital, cash) – a system of purchasing cash credits in relatively small amounts, storing the credits in your computer, and then spending them when making electronic purchases over the Internet. Theoretically, e-cash could be spent in very small increments, such as tenths of a cent (U.S.) or less. Most merchants accepting digital cash so far, however, use it as an alternative to other forms of payment for somewhat higher price purchases. E-cash can also be stored on an electronically sensitive card.

e-commerce (electronic commerce) – the process of conducting business (buying and selling of goods and services) on the Internet, especially the World Wide Web. In practice, this term and a new term, "e-business," are often used interchangeably. When talking about Internet-based transactions for the state of North Carolina, e-government should be used instead of e-commerce.

EDI (electronic data interchange) – a data exchange technology that facilitates the rapid, accurate exchange of standard commercial transactions by creating, transferring, and processing transactions electronically. EDI is the transmission between two trading partners of the data comprising common business transactions, in a mutually agreed-upon format.

e-form (electronic form) – a computer program version of a paper form. Aside from eliminating the cost of printing, storing, and distributing pre-printed forms, and the wastage of obsolete forms, e-forms can be filled out faster because the programming associated with them can automatically format, calculate, look up, and validate information for the user. With digital signatures and routing via e-mail, approval cycle times can be significantly reduced. With electronic submission of completed forms, you can eliminate the cost of rekeying data and the associated errors.

EFT (electronic funds transfer) – a system of transferring money from one bank account directly to another without any paper money changing hands. One of the most widely-used EFT programs is Direct Deposit, in which payroll is deposited straight into an employee's bank account, although EFT refers to any transfer of funds initiated through an electronic terminal, including credit card, ATM, Fedwire and point-of-sale (POS) transactions. It is used for both credit transfers, such as payroll payments, and for debit transfers, such as mortgage payments.

e-government (electronic government) – government services available online to citizens, employees, and businesses

elementizing – a data cleansing process that breaks a data record into elements (e.g., the address 123 Main Street may be broken down into Street Number: 123, Street Name: Main, Street Type: Street).

e-mail – electronic mail messages in the form of text, documents, images, and other electronic files

e-mail application programming interface – an interface that enables programs to access various components of the e-mail system

e-mail front end – the interface for composing and reading e-mail messages; it can appear in three different formats: e-mail viewer front-end, e-mail enabled front-end, and non-user interface

e-mail gateways – a software service that is responsible for transferring messages between incompatible e-mail systems

e-mail server – a server that provides a set of services to one or multiple clients in an e-mail environment. The services may include: distribute files, temporarily hold new messages, or store messages that have already been read. It may be located on the desktop PC or on a combination of servers accessed on a LAN.

e-mail system – software that manages the transmission of e-mail and manages mailboxes

encapsulation – a technology where data and logic are protected from uncontrolled external access. Data is considered encapsulated if it can only be accessed via the software programs that manage it.

encryption – the conversion of data into a form, called a *cipher*, that cannot be easily understood by unauthorized people

end user – the final link in the customer service request or computer program usage chain

enterprise – any agency, department, division, or service provider that is a part of the North Carolina state government system. In the computer industry, an enterprise is an organization that uses computers. A word was needed that would encompass corporations, small businesses, non-profit institutions, government bodies, and possibly other kinds of organizations. The term enterprise seemed to do the job. In practice, the term is applied much more often to larger organizations than smaller ones.

enterprise application service provider – a third-party entity that manages and distributes high-end business applications to customers across a wide area network (WAN) from a central data center.

enterprise management – as defined in North Carolina SB 222, “IT enterprise management” refers to distributed IT assets. IT enterprise management is an approach that uses policies, procedures, and technical infrastructure to manage the state’s tremendous investment in distributed IT assets, such as workstations, servers, routers, etc., to minimize total life-cycle costs while maximizing benefits for transacting the state’s business and delivering services to its citizens.

enterprise portal – Portal is a new term, generally synonymous with gateway, for a World Wide Web site that is or proposes to be a major starting site for users when they get connected to the Web or that users tend to visit as an anchor site. Typical services offered by portal sites include a directory of Web sites, a facility to search for other sites, news, weather information, e-mail, stock quotes, phone and map information, and sometimes a community forum. The primary goal of an enterprise portal is to decrease the effort required to move pertinent, contextually relevant information to those that require it.

EPMO (Enterprise Program Management Office) – This entity supports decision making regarding the prioritization and utilization of IT resources assigned to major projects as well as their progress relative to project objectives and milestones. Typically, the EPMO reports to an IT steering committee composed of management from all lines of business and the CIO.

e-procurement – the business-to-business purchase and sale of supplies and services over the Internet. An important part of many business-to-business sites, e-procurement is also sometimes referred to by other terms, such as supplier exchange. Typically, e-procurement Web sites allow qualified and registered users to look for buyers or sellers of goods and services. Depending on the approach, buyers or sellers may specify prices or invite bids. Transactions can be initiated and completed. Ongoing purchases may qualify customers for volume discounts or special offers.

E-Rate – The Schools and Libraries Program, commonly called the "E-Rate," is administered by the Schools and Libraries Division (SLD) of the Universal Services Administrative Company (USAC). USAC oversees the administration of all universal service support, which includes the

High Cost Program, the Low-Income Program, the Rural Health Care Program, and the Schools and Libraries Program. The Schools and Libraries Universal Service Program was established as part of the Telecommunications Act of 1996 with the express purpose of providing affordable access to telecommunications services for all eligible schools and libraries, particularly those in rural and inner-city areas. Funded at up to $2.25 billion annually, the Program provides discounts of 20% to 90% on telecommunications services, Internet access and internal connections.

Funding for the universal service discounts comes from the telecommunications industry, in an Information Age update to the time-honored concept of universal service. The level of discounts schools and libraries are eligible to receive depends on economic need and location, rural or urban; once approved, they apply their discounts to telecommunications services, Internet access and internal connections, then pay the difference out of their own budgets.

ERP (enterprise resource planning) – an industry term for the broad set of activities supported by multi-module application software that help a manufacturer or other business manage the important parts of its business, including product planning, parts purchasing, maintaining inventories, interacting with suppliers, providing customer service, and tracking orders. ERP can also include application modules for the finance and human resources aspects of a business. Typically, an ERP system uses or is integrated with a relational database system. The deployment of an ERP system can involve considerable business process analysis, employee retraining, and new work procedures.

Ethernet – a local-area network (LAN) protocol that uses a bus topology and is one of the most widely implemented LAN standards to exchange information between computers on a network. Ethernet allows individuals to share files as well as peripherals such as a printer.

exabyte – a large unit of computer data storage, two to the sixtieth power bytes. The prefix *exa* means one billion billion, or one quintillion, which is a decimal term. Two to the sixtieth power is actually 1,152,921,504,606,846,976 bytes in decimal, or somewhat over a quintillion (or ten to the eighteenth power) bytes. It is common to say that an exabyte (EB) is approximately one quintillion bytes. In decimal terms, an exabyte is a billion gigabytes.

executable program – software that is compiled and ready to execute on a computer platform

extensible – the ability to easily integrate new technology and functionality

extranet – a private network that uses the Internet protocols and the public telecommunication system to securely share part of a business's information or operations with suppliers, vendors, partners, customers, or other businesses. An extranet can be viewed as part of a company's intranet that is extended to users outside the company. It has also been described as a "state of mind" in which the Internet is perceived as a way to do business with other companies as well as to sell products to customers.

The same benefits that HTML, HTTP, SMTP, and other Internet technologies have brought to the Internet and to corporate intranets now seem designed to accelerate business between businesses. An extranet requires security and privacy. These require firewall server management, the issuance and use of digital certificates or similar means of user authentication, encryption of messages, and the use of virtual private networks (VPNs) that tunnel through the public network.

fat client – a two-tier client/server model for application design in which the business rules are tightly integrated and deployed with the code that implements the graphical user interface. A fat client is usually deployed on a workstation.

fat server – a two-tier client/server model for application design in which the business rules are tightly integrated and deployed with the code that performs data access. A fat server is usually deployed on a server.

FDDI (Fiber Distributed Data Interface) – a WAN technology for wiring and access control. FDDI offers operating speeds of 100 megabits per second (Mbps) and is a good choice for a

backbone network solution. FDDI is a standard for data transmission on fiber optic lines in a local area network that can extend in range up to 200 km (124 miles). The FDDI protocol is based on the token ring protocol.

In addition to being large geographically, an FDDI local area network can support thousands of users. An FDDI network contains two token rings, one for possible backup in case the primary ring fails. The primary ring offers up to 100 Mbps capacity. If the secondary ring is not needed for backup, it can also carry data, extending capacity to 200 Mbps. The single ring can extend the maximum distance; a dual ring can extend 100 km (62 miles).

federated data – common data elements that are defined consistently across the enterprise, even if located in multiple places. It is stored and maintained once whenever possible, accessed by each system that needs it, and collection, verification, storage, and maintenance are typically all in one place.

fiber optic cable – a network cabling technology. Fiber optic cable uses light impulses instead of electrical impulses to transmit data from point A to point B. Due to the high cost and high capacity of fiber optic cabling, it is typically used as a backbone solution.

file server – (1) A high-capacity disk storage device or a computer that each computer on a network can use to access and retrieve files that can be shared among attached computers. **Note:** Access to a file is usually controlled by the file server's software rather than by the operating system of the computer that accesses the file. (2) Hardware and software that manage files and shared disk space on a network

filter – a program or section of code that is designed to examine each input or output request for certain qualifying criteria and then process or forward it accordingly. This term was used in UNIX systems and is now used in other operating systems. A filter is "pass-through" code that takes input data, makes some specific decision about it and possible transformation of it, and passes it on to another program in a kind of pipeline. Usually, a filter does no input/output operation on its own. Filters are sometimes used to remove or insert headers or control characters in data.

firewall – (1) One or more computer systems placed between trusted and non-trusted networks to prevent unauthorized access to networks and systems (2) A combination of hardware and software that separates a LAN into two or more parts for security purposes

A firewall is a set of related programs, located at a network gateway server that protects the resources of a private network from users from other networks. (The term also implies the security policy that is used with the programs.) An enterprise with an intranet that allows its workers access to the wider Internet installs a firewall to prevent outsiders from accessing its own private data resources and for controlling what outside resources its own users have access to.

Basically, a firewall, working closely with a router program, filters all network packets to determine whether to forward them toward their destination. A firewall also includes or works with a proxy server that makes network requests on behalf of workstation users. A firewall is often installed in a specially designated computer separate from the rest of the network so that no incoming request can get directly at private network resources.

firmware – an ordered set of instructions and data stored in a way that is functionally independent of main storage. **Note:** The term firmware describes microcode in ROM. At the time they are coded, micro-instructions are software. When they are put into ROM, they become part of the hardware (microcode) or a combination of hardware and software (micro-programs). Usually, microcode is permanent and cannot be modified by the user, but there are exceptions.

frame relay – a data communications interface that provides high-speed transmission with minimum delay and efficient use of bandwidth. It does not have error detection or error control and it assumes that connections are reliable.

front end – the user interface portion of a client/server application

FTP (File Transfer Protocol) – in TCP/IP, an application protocol used for transferring files to and from host computers. FTP, a standard Internet protocol, is the simplest way to exchange files between computers on the Internet. Like the Hypertext Transfer Protocol (HTTP), which transfers displayable Web pages and related files, and the Simple Mail Transfer Protocol (SMTP), which transfers e-mail, FTP is an application protocol that uses the Internet's TCP/IP protocols.

FTP is commonly used to transfer Web page files from their creator to the computer that acts as their server for everyone on the Internet. It's also commonly used to download programs and other files to your computer from other servers. As a user, you can use FTP with a simple command line interface (for example, from the Windows MS-DOS Prompt window) or with a commercial program that offers a graphical user interface (GUI). Your Web browser can also make FTP requests to download programs you select from a Web page.

gateway – (1) A functional unit that interconnects two computer networks with different network architectures. A bridge interconnects networks or systems with the same or similar architectures. (2) In TCP/IP, a device used to connect two systems that use either the same or different communications protocols (3) The combination of machines and programs that provide address translation, name translation, and systems services control point rerouting between independent SNA networks to allow those networks to communicate (4) Hardware or software that handles communication between two dissimilar protocols. In the network for an enterprise, a computer server acting as a gateway node is often also acting as a proxy server and a firewall server. Gateways also involve the use of routers and switches.

Gbps – billions of bits per second; a measure of bandwidth on a digital data transmission medium such as optical fiber. With slower media and protocols, bandwidth may be in the Mbps (millions of bits or megabits per second) or the Kbps (thousands of bits or kilobits per second) range.

GIF (Graphics Interchange Format) – a file format for images. GIF is commonly used on the World Wide Web.

gigabyte – a measure of computer data storage capacity and is "roughly" a billion bytes. A gigabyte is two to the 30th power, or 1,073,741,824 in decimal notation.

glass house – an informal term used to describe mainframe data centers. The glass house term evolved because of the windows surrounding a data center. People could see inside but needed special authorization to enter.

gov – "gov" is one of the top-level domain names that can be used when choosing a domain name. It generally describes the entity owning the domain name as a branch or an agency of the U.S. Federal government. (Other U.S. government levels are encouraged to use the geographic top-level domain name of "us.")

Along with the second-level domain name (for example: "whitehouse" in whitehouse.gov), the top-level domain name is required in Web and e-mail addresses. The Internet Assigned Numbers Authority (IANA) has overall responsibility for domain names (as well as for IP addresses and many other Internet parameters). Day-to-day responsibility is delegated to the Internet Registry (IR) and regional registries. In North America, the domain name registry is InterNIC. Specific criteria are set forth for the use of the top-level domain name in RFC 1591 - Domain Name System Structure and Delegation and in InterNIC's Registration Template.

granularity – the relative size, scale, level of detail, or depth of penetration that characterizes an object or activity. It may help to think of it as: which type of "granule" are we looking at? This term is used in astronomy, photography, physics, linguistics, and fairly often in information technology. It can refer to the level of a hierarchy of objects or actions, to the fineness of detail in a photograph, or to the amount of information that is supplied in describing a person's age.

groupware – software that provides the infrastructure for staff to work collaboratively and share information electronically, regardless of where they are geographically located

GUI (graphical user interface) – an end-user interface to an application that makes use of windows, icons, menus, pointers, and scroll bars. A GUI accepts input from a keyboard and a pointing device, such as a mouse. It takes advantage of the graphical computer environments and is typically easy to use and understand.

hand-held computer – a computer that can conveniently be stored in a pocket (of sufficient size) and used while you're holding it. Today's hand-held computers, which are also called personal digital assistants (PDAs), can be divided into those that accept handwriting as input and those with small keyboards. Windows CE and EPOC are two of the most widely used operating systems in hand-held computers.

hard-coded – an informal term that describes a programming technique where logic, data, and procedures are specifically written into a software program

hardware – (1) All or part of the physical components of an information processing system, such as computers or peripheral devices (2) Physical devices that are capable of performing automated computing functions

hard-wired – a direct physical connection between computing devices

harvesting – the examination of legacy applications to identify functions that can be isolated into stand-alone program modules or components. These modules and components can be shared by many applications.

help desk – an integrated support services structure forming the hub for effectively using and deploying technology. It is the central collection point for client contact and control of the problem, change, and service management process.

heterogeneous systems – information systems that contain components and software from different manufacturers

HIPAA (Health Insurance Portability and Accountability Act) – legislation helping to set a national standard for protecting the security and integrity of medical records when they are kept in electronic form

home page – the set of files containing related information coded in Hypertext Markup Language (HTML) and placed on a computer linked to the Internet and available to users on the Internet via a Universal Resource Locator (URL) address.

(1) For a Web user, the home page is the first Web page that is displayed after starting a Web browser like Netscape's Navigator or Microsoft's Internet Explorer. The browser is usually preset so that the home page is the first page of the browser manufacturer. However, you can set it to open to any Web site.

(2) For a Web site developer, a home page is the first page presented when a user selects a site or presence on the World Wide Web. The usual address for a Web site is the home page address, although you can enter the address (URL) of any page and have that page sent to you.

host – a platform on which software executes

HSM (hierarchical storage management) – policy-based management of file backup and archiving in a way that uses storage devices economically and without the user needing to be aware of when files are being retrieved from backup storage media. Although HSM can be implemented on a stand-alone system, it is more frequently used in the distributed network of an enterprise.

The hierarchy represents different types of storage media, such as RAID systems, optical storage, or tape, each type representing a different level of cost and speed of retrieval when access is needed. For example, as a file ages in an archive, it can be automatically moved to a slower but less expensive form of storage. Using an HSM product, an administrator can establish

and state guidelines for how often different kinds of files are to be copied to a backup storage device. Once the guideline has been set up, the HSM software manages everything automatically.

HTML (Hypertext Markup Language) – a language used to create electronic documents for use on the internet or the intranet. An HTML document can be viewed by a Web browser.

HTTP (Hypertext Transfer Protocol) – the fundamental protocol used by the World Wide Web. HTTP defines message formatting, message transmission, and what action Web servers and browsers should take in response to various commands.

hub – a network hardware component that connects cables from numerous network devices in a star topology. A hub can be described as intelligent when the hub monitors and reports upon network activity.

hypertext – the organization of information units into connected associations that a user can choose to make. An instance of such an association is called a link or hypertext link. Hypertext was the main concept that led to the invention of the World Wide Web, which is, after all, nothing more (or less) than an enormous amount of information content connected by an enormous number of hypertext links. Ted Nelson first used the tem to describe his Xanadu system.

IANA (Internet Assigned Numbers Authority) – an Internet central registry for the assigned values of the addresses (in the form of numbers) used in TCP/IP network protocol implementations. IANA is the organization under the Internet Architecture Board (IAB) of the Internet Society that, under a contract from the U.S. government, has overseen the allocation of IP addresses to Internet service providers (ISPs).

IANA also has had responsibility for the registry for any "unique parameters and protocol values" for Internet operation. These include port numbers, character sets, and MIME media access types. Partly because the Internet is now a global network, the U.S. government has withdrawn its oversight of the Internet, previously contracted out to IANA, and lent its support to a newly formed organization with global, non-government representation, the Internet Corporation for Assigned Names and Numbers (ICANN).

ICANN (The Internet Corporation of Assigned Names and Numbers) – ICANN has been designated to conduct the registrar accreditation process of domain name registration for top-level domains (gov, net, com, org). ICANN's responsibility ultimately is derived from the Internet Assigned Numbers Authority (IANA), which inherited responsibility for Internet root naming and address assignment from the originator of the Internet, DARPA.

IDL (Interface Definition Language) – a method for component developers to describe a component's API enabling applications to pass parameters and receive results during component execution

IETF (Internet Engineering Task Force) – a large, open, international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet. IETF is generally recognized as the standards organization for the Internet.

IIOP (Internet Inter-ORB Protocol) – a protocol developed by the Object Management Group (OMG) implementing CORBA solutions over the World Wide Web. IIOP enables browsers and servers to exchange integers, arrays, and other complex objects.

imaging – the processes and technologies associated with incorporating photographic renderings into systems

IMAP (Internet Message Access Protocol) – a standard protocol for accessing e-mail from your local server. IMAP (the latest version is IMAP4) is a client/server protocol in which e-mail is received and held for you by your Internet server. You (or your e-mail client) can view just the heading and the sender of the letter and then decide whether to download the mail. You can also

create and manipulate folders or mailboxes on the server, delete messages, or search for certain parts or an entire note. IMAP requires continual access to the server during the time that you are working with your mail.

index – a method used to catalog particular fields within a database to improve the performance of queries against the data. Database indexes are comparable to how a dictionary has tabs for the letters of the alphabet so that it is easier to look up a word, or a reference book has an index to quickly find information needed.

industry standard – a defined standard for a particular industry (i.e., a particular solution or product base)

information – a compilation of operational data from across the organization. Information is used for reporting and analysis to support the decision-making process.

information design – the detailed planning of specific information that is to be provided to a particular audience to meet specific objectives. The output of an information design is sometimes expressed in written instructions, plans, sketches, drawings, or formal specifications. However, on very small projects, information design is likely to be much less formal.

information model – used by application or data architects to build a data warehouse. Before a data warehouse can become a reality, a model must be built to assist in the design. The information model is stored in a repository.

infranet – a term used to refer to the infrastructure of a network, especially the Internet. For the Internet, the infranet is that portion of the public telephone network on which data packets are exchanged using Internet protocols. It can also be said to include private network infrastructures that use the Internet set of protocols, TCP/IP, whether or not these interconnect with the public Internet.

The term was used to describe the major switching hardware and technologies, such as frame relay and ATM, in an April 1999 article, "The Next Net," in *Wired* magazine. John Chambers, head of Cisco Systems, is credited with coining the term. Infranet® is also the trade mark of Portal Software Inc., which uses the brand for their Internet (IP and VoIP) customer management and billing software and other tools.

infrastructure – refers to the entire spectrum of information processing technologies and services. This includes data processing, telecommunications, office automation equipment and related goods and services, technical and user personnel, computer operating systems, and licensed programs. Information infrastructure includes, but is not limited to: computer hardware, firmware, and peripherals software management, support, and applications; telecommunications networks (wired and wireless) and their management systems; facilities (static, mobile, and portable) and supporting environmental utilities infrastructure (electricity, air conditioning, and more); personnel and user issues.

integration – the process of integrating new client/server, adaptive, and distributed systems with existing systems while still optimizing performance, minimizing maintenance and utilizing existing platforms

intelligent agent – a program that gathers information or performs some other service without your immediate presence and on some regular schedule. Typically, an agent program, using parameters you have provided, searches all or some part of the Internet, gathers information you're interested in, and presents it to you on a daily or other periodic basis.

An agent is sometimes called a bot (short for robot). Other agents have been developed that personalize information on a Web site based on registration information and usage analysis. Other types of agents include specific site watchers that tell you when the site has been updated or look for other events and analyst agents that not only gather but also organize and interpret information for you. The practice or technology of having information brought to you by an agent is sometimes referred to as push technology.

intelligent workstation – a computer that can work independently or work as part of a network. An intelligent workstation is more commonly referred to as a personal computer, or PC.

interactive – a process where a request is processed immediately and a response is received

interactive system – a computer application system that accepts input and immediately processes the request

inter-application middleware – communication between the application system and external services, such as common shared services and other application systems

interface – (1) Hardware, software, or both that link systems, programs, or devices (2) A manner of presentation allowing applications to communicate with people and with other software programs

Internet – sometimes called simply "the Net" or “the Web.” The Internet is a worldwide system of computer networks, a network of networks in which users at any one computer can, if they have permission, get information from any other computer (and sometimes talk directly to users at other computers). It was conceived by the Advanced Research Projects Agency (ARPA) of the U.S. Government in 1969 and was first known as the ARPANet. The original aim was to create a network that would allow users of a research computer at one university to be able to "talk to" research computers at other universities. A side benefit of ARPANet's design was that, because messages could be routed or rerouted in more than one direction, the network could continue to function even if parts of it were destroyed in the event of a military attack or other disaster.

InterNIC (Internet Network Information Center) – a cooperative activity between the U.S. Government and Network Solutions, Inc. Until recently, InterNIC was the organization responsible for registering and maintaining the com, net, and org top-level domain names on the World Wide Web. The actual registration was performed by Network Solutions, Inc.

As a result of a new U. S. Government Statement of Policy (known as "the white paper") in October, 1998, competition will be introduced in domain name registration for these top-level domains and a new, non-profit global organization, the Internet Corporation of Assigned Names and Numbers (ICANN), has been designated to conduct the registrar accreditation process. ICANN has initially designated five new registrar companies—in addition to Network Solutions—for a two-month test period. After that period, additional registrars are expected to be accredited.

interoperability – the capability for software services or components to easily exchange logic, data, and information

inter-query parallelism – a parallel processing method where multiple queries from multiple concurrent users can be processed at the same time

intra-application middleware – communication within the tiers of an application system

intranet – information made available to a limited set of users, usually within a corporation, government entity, or educational institution that is often coded with HTML and viewed with a browser

intra-query parallelism – a parallel processing method where a single query can be broken down into multiple processes and all can be processed in parallel

IOTP (Internet Open Trading Protocol) a set of standards that makes all electronic purchase transactions consistent for customers, merchants, and other involved parties, regardless of payment system. IOTP accommodates a wide range of payment systems such as SET, DigiCash, e-checks, and debit cards. Payment system data is encapsulated within IOTP messages. IOTP is designed to handle a transaction that involves a number of different parties: the customer, merchant, credit checker and certifier, bank, and delivery handler. IOTP uses the Extensible Markup Language (XML) to define data that encompasses everything that may be needed in a transaction.

IP (Internet Protocol) – a communication protocol that routes packets of data from one node on the Internet to another. IP routes each packet based on a four-byte destination address (the IP number, e.g., 123.456.789.1). Ranges of numbers are assigned to different organizations. The organizations then assign groups of their numbers to sections or departments.

IP operates on gateway machines that move data from department to organization to region and then around the world. Each computer (known as a host) on the Internet has at least one address that uniquely identifies it from all other computers on the Internet. When you send or receive data (for example, an e-mail note or a Web page), the message gets divided into little chunks called packets. Each of these packets contains both the sender's Internet address and the receiver's address. Any packet is sent first to a gateway computer that understands a small part of the Internet. The gateway computer reads the destination address and forwards the packet to an adjacent gateway that in turn reads the destination address and so forth across the Internet until one gateway recognizes the packet as belonging to a computer within its immediate neighborhood or domain. That gateway then forwards the packet directly to the computer whose address is specified. Because a message is divided into a number of packets, each packet can be sent by a different route across the Internet. Packets can arrive in a different order than the order they were sent in. The Internet Protocol just delivers them. It's up to another protocol, the Transmission Control Protocol (TCP) to put them back in the right order.

IP address – This definition is based on Internet Protocol Version 4. Note that the system of IP address classes described here, while forming the basis for IP address assignment, is generally bypassed today by use of Classless Inter-Domain Routing (CIDR) addressing.

In the most widely installed level of the Internet Protocol (IP) today, an IP address is a 32-bit number that identifies each sender or receiver of information that is sent in packets across the Internet. When you request an HTML page or send e-mail, the Internet Protocol part of TCP/IP includes your IP address in the message (actually, in each of the packets if more than one is required) and sends it to the IP address that is obtained by looking up the domain name in the URL you requested or in the e-mail address you're sending a note to.

At the other end, the recipient can see the IP address of the Web page requestor or the e-mail sender and can respond by sending another message using the IP address it received. An IP address has two parts: the identifier of a particular network on the Internet and an identifier of the particular device (which can be a server or a workstation) within that network. On the Internet itself, that is, between the routers that move packets from one point to another along the route, only the network part of the address is looked at.

IRM (Information Resource Management) – a section within ITS that provides staff support to the IRMC and its oversight of statewide information resource management serving private citizens, corporate citizens, private business partners, public employees, county and municipal governments, and federal agencies. It is responsible for the statewide technical architecture, large project monitoring and quality assurance, the Application Portfolio Management System (APMS), e-government, federated data, and the state's adaptive infrastructure.

IRMC (Information Resource Management Commission) – a North Carolina governmental organization that provides increased emphasis for strategic information technology planning and policy development. The IRMC was created within the NC Department of Commerce with the powers and duties assigned by N.C.G.S. 143B-472.41 ratified by the 1997 session of the General Assembly.

ISDN (Integrated Services Digital Network) – a network technology implemented through a digital telephone service providing high-speed integration of voice and data over special telephone lines. ISDN uses asynchronous transfer mode (ATM).

ISO (International Organization for Standardization) – an international organization composed of national standards bodies from over 75 countries. ISO has defined a number of important

computer standards, the most significant of which is perhaps the Open Systems Interconnection (OSI), a standardized architecture for designing networks.

ISP (Internet service provider) – a company that provides individuals and other companies access to the Internet and other related services, such as Web site building and hosting. An ISP has the equipment and the telecommunication line access required to provide points-of-presence on the Internet for the geographic area served. The larger ISPs have their own high-speed leased lines so that they are less dependent on the telecommunication providers and can provide better service to their customers.

IT (information technology) – the technology surrounding information systems. IT is a term that encompasses all forms of technology used to create, store, exchange, and use information in its various forms (business data, voice conversations, still images, motion pictures, multimedia presentations, and other forms, including those not yet conceived). It's a convenient term for including both telephony and computer technology in the same word. It is the technology that is driving what has often been called "the information revolution."

IT enterprise management – As defined in North Carolina SB 222, “IT enterprise management” refers to distributed IT assets. IT enterprise management is an approach that uses policies, procedures, and technical infrastructure to manage the state’s tremendous investment in distributed IT assets—such as workstations, servers, routers, etc.—to minimize total life-cycle costs while maximizing benefits for transacting the state’s business and delivering services to its citizens.

IT portfolio-based management – links IT investments with political priorities and program strategies and provides tools to monitor and manage using portfolio management techniques

IT procurement – ensures that the state (NC) buys the best goods and services at the lowest total life-cycle costs

ITS (Office of Information Technology Services) ITS provides shared information technology services for state agencies and other governmental units in the areas of information processing, telecommunications, systems development, and technology training.

IVR (interactive voice response) – a type of computer telephony interface enabling a caller to interface with computer applications via a telephone. The IVR software application prompts users for input, provides menus of options, and provides output from the application in human-understandable speech. The user provides input to the IVR application using the telephone keypad and, occasionally, speech.

JAD (joint application development) – a methodology introduced by IBM to facilitate end-user and developer participation in the application development process

Java – a high-level programming language from Sun Microsystems designed for use on the World Wide Web

JPEG (Joint Photographic Experts Group) – a file format for color images and one of two graphics file formats supported on the World Wide Web. (The other format is GIF.) JPEG files usually end with a .jpg extension.

Kbps (kilobits per second) – a measure of bandwidth (the amount of data that can flow in a given time) on a data transmission medium. Higher bandwidths are more conveniently expressed in megabits per second (Mbps, or millions of bits per second) and in gigabits per second (Gbps, or billions of bits per second).

Kerberos – a private key encryption-based authentication mechanism for network security, developed by MIT’s Project Athena

Kermit – a popular file transfer and management protocol and suite of communications software programs with advantages over existing Internet protocols such as FTP and Telnet. It is freeware, developed and maintained by members of the Kermit Project at Columbia University.

The Kermit protocol is described as "fast, robust, extensible, tunable, and medium-independent." In addition to the protocol support, the Kermit suite includes terminal emulation, character-set translation, and scripting. The suite can be installed on almost any operating system, including Windows, UNIX, DOS, VMS, OS/2, and a number of mainframe operating systems. Most versions support direct and dialed serial connections (with a modem) and network connections (Telnet and often others such as Rlogin, LAT, or X.25).

key – a string of digits that produces cipher text when used with a cryptographic algorithm

kiosk – an extension of the automated teller machine concept, with a free-standing point of access disseminating information and services to the public through the use of touch screens, audio, video, and teleconferencing

knowledge management – the name of a relatively new concept in which an enterprise consciously and comprehensively gathers, organizes, shares, and analyzes its knowledge to further its aims. In early 1998, it was believed that few enterprises actually had a comprehensive knowledge management practice (by any name) in operation. Instead, many companies are focusing on existing processes and striving to bring them together.

Some aspects of knowledge management—such as data mining and pushing information to users—are new; others, such as data entry and OCR, are very familiar. Some vendors are now offering products that address the newer ideas. Since the process is complex, involving many stages and addressing many different needs, no vendor provides a comprehensive suite of products, according to industry experts. The consensus is that an enterprise's knowledge management plan can only be implemented with a meld of different products.

LAN (local area network) – a computer network that links multiple workstations and other devices in a limited area, typically with a local geographic area. Typically, this might be within the area of a small office building. However, Fiber Distributed Data Interface (FDDI) extends a local area network over a much wider area. Usually, the server has applications and data storage that are shared in common by multiple workstation users. A local area network may serve as few as four or five users or, in the case of FDDI, may serve several thousand. The main LAN technologies are Ethernet, token ring, ARCNET, and FDDI.

laser printer – a non-impact printer that creates, by means of a laser beam directed on a photosensitive surface, a latent image which is then made visible by a toner and transferred and fixed on paper

last-mile technology – any telecommunications technology, such as wireless radio, that carries signals from the broad telecommunication infrastructure along the relatively short distance (hence, the "last mile") to and from the home or business. Or to put it another way: the infrastructure at the neighborhood level. In many communities, last-mile technology represents a major remaining challenge to high-bandwidth applications such as on-demand television, fast Internet access, and Web pages full of multimedia effects. Today, in addition to "plain old telephone (dial-up) service," last-mile technologies that deliver voice, data, and TV can include: ISDN, DSL over existing telephone twisted-pair lines, cable and the cable modem for data (using the same installed coaxial cable that already is used for television), and wireless, including services such as DirecTV.

LATA (local access transport area) – a term in the U.S. for a geographic area covered by one or more local telephone companies, which are legally referred to as local exchange carriers (LECs). A connection between two local exchanges within the LATA is referred to as intraLATA. A connection between a carrier in one LATA to a carrier in another LATA is referred to as interLATA. InterLATA is long-distance service. The current rules for permitting a company to provide intraLATA or interLATA service (or both) are based on the Telecommunications Act of 1996.

LEC (local exchange carrier) – a local telephone company, such as Southern Bell, GTE, and Carolina Sprint. There are a number of independent LECs. LEC companies are also sometimes

referred to as "telcos." A "local exchange" is the local "central office" of an LEC. Lines from homes and businesses terminate at a local exchange. Local exchanges connect to other local exchanges within a local access and transport area (LATA) or to interexchange carriers (IXCs), such as long-distance carriers AT&T, MCI, and Sprint.

legacy application – In information technology, legacy applications and data are those that have been inherited from languages, platforms, and techniques earlier than current technology. Most enterprises that use computers have legacy applications and databases that serve critical business needs. Typically, the challenge is to keep the legacy application running while converting it to newer, more efficient code that makes use of new technology and programmer skills. In the past, much programming has been written for specific manufacturers' operating systems. Currently, many companies are migrating their legacy applications to new programming languages and operating systems that follow open or standard programming interfaces. Theoretically, this will make it easier in the future to update applications without having to rewrite them entirely and will allow a company to use its applications on any manufacturer's operating system.

In addition to moving to new languages, enterprises are redistributing the locations of applications and data. In general, legacy applications have to continue to run on the platforms they were developed for. Typically, new development environments account for the need to continue to support legacy applications and data.

legacy system – in-place system that uses older, often outdated, technology

Level 1 Support – a help desk function tier. Level 1 client support should have end-to-end responsibility for each client request. The help desk analyst should be empowered to resolve as many requests as possible. Level 1 support provides the client contact point or call ownership, which is the single point of contact for the end user to request a service. Organizations should retain control of tier 1 help desk to ensure the quality of the customer relationship.

Level 2 Support – a help desk function tier. Level 2 client support provides advanced technical expertise to the Level 1 client contact points. Their responsibility is to analyze the requests routed to them and resolve the problems. Resources at this level can be composed of staff specialists and/or third-party providers/vendors.

Level 3 Support – a help desk function tier. Level 3 client support is composed of highly specialized technical experts. Calls that cannot be solved at Levels 1 and 2 are routed to this level. Resources at this level can be composed of staff specialists and/or third-party providers/vendors.

leveraged management of IT – the practice of constructing and coordinating operational and business functions across organizational and geographic boundaries to provide service and support for the comprehensive IT environment

list server – a program that handles subscription requests for a mailing list and distributes new messages, newsletters, or other postings from the list's members to the entire list of subscribers as they occur or are scheduled. (A list server should not be confused with a mail server, which handles incoming and outgoing e-mail for Internet users.) Two commonly used list servers are listserv and Majordomo. Lyris is a list server that is free for users maintaining very small mailing lists and scales up in price for those managing thousands of mailing list subscribers.

LOB (line of business) – an individual business unit within a larger organization

logical application boundary – a boundary that exists between related application systems

look and feel – the appearance and behavior of a graphical user interface (GUI) to the end user, determined by the tools and style guide provided by the vendor

loosely coupled – the method of n-tier application development where services and components are implemented as separate tiers. If a tier changes, it is easy to deploy the change since it does not affect other tiers.

LPAR (logical partition) – (1) Physical partition that is divided into a greater number of partitions using software. The number of logical partitions within a logical volume is variable. (2) In the IBM mainframe operating environment, this is the concept where one physical computer system can be divided up into multiple mainframe operating environments utilizing software partitioning. This allows ITS to partition a single physical computer into several different "virtual" computers, which can be started and stopped separately while sharing the same hardware resources.

machine language – the language that a computer uses to process commands. Machine languages are built from numbers only and are specific to each computer platform.

mailbox – an electronic storage area that manages e-mail for a particular end user

mainframe – (1) A computer, usually in a computer center, with extensive capabilities and resources to which other computers may be connected so that they can share facilities **Note:** the term usually refers to the hardware only: main storage, execution circuitry, and peripheral units. (2) A large and powerful computer that is capable of supporting thousands of simultaneous users

MAPI (Messaging Application Programming Interface) – a system built into Microsoft Windows that enables e-mail-style messaging by a variety of Windows applications. It allows different applications to distribute messages to each other.

marketspace – a new term for the market where electronic commerce is conducted. It encompasses the transition from physically defined markets to markets based on and controlled by information.

Mbps (millions of bits per second) – a measure of bandwidth (the total information flow over a given time) on a data transmission medium such as twisted-pair copper cable, coaxial cable, or optical fiber. Depending on the medium and the transmission method, bandwidth may also be in the Kbps (thousands of bits or kilobits per second) range or the Gbps (billions of bits or gigabits per second) range.

megabyte – (1) As a measure of computer processor storage and real and virtual memory, a megabyte (abbreviated MB) is 2 to the 20th power bytes, or 1,048,576 bytes in decimal notation. (2) According to the *IBM Dictionary of Computing*, when used to describe disk storage capacity and transmission rates, a megabyte is 1,000,000 bytes in decimal notation. (3) According to the *Microsoft Press Computer Dictionary*, a megabyte means either 1,000,000 bytes or 1,048,576 bytes. (4) According to Eric S. Raymond in *The New Hacker's Dictionary*, a megabyte is always 1,048,576 bytes on the argument that bytes should naturally be computed in powers of two.

message store – a database used to file and manipulate e-mail messages, allowing messages to be opened, read, deleted, browsed, and searched

messaging – the process where a message is the delivery vehicle for service requests and replies

metadata – information about data, including the format of the data element, which application system owns it, where it is located, how it should be used. Metadata is the global information about what data exists across the enterprise and the standards that apply to that data.

microcash – small denomination digital tokens

micromerchants – those who offer their wares on the Internet in exchange for e-cash or digital cash

middleware – (1) Software and application program interfaces that serve as intermediaries among application programs and services, for example, gateway software between LAN-based database servers and mainframe databases (2) A layer of software that enables application,

component, and data access communication. Middleware insulates programmers from the complexities of the communication architecture, such as network protocols.

midrange machine – a large computer (smaller than a mainframe) that supports hundreds of simultaneous users

migration – the process of moving files from one storage medium to another. An administrator can set high and low thresholds for hard disk capacity that hierarchical storage management (HSM) software will use to decide when to migrate older or less-frequently used files to another medium. Certain file types, such as executable files (programs), can be excluded from those to be migrated.

MIME (Multipurpose Internet Mail Extensions) – an SMTP message structure that is the standard specification for the attachment of audio, video, image, and application programs to plain ASCII text messages

minicomputer – an intermediate-size computer that can perform the same kinds of applications as a mainframe but has less storage capacity, processing power, and speed than a mainframe

MIPS (millions of instructions per second) – The number of MIPS is a general measure of computing performance and, by implication, the amount of work a larger computer can do. For large servers or mainframes, it is also a way to measure the cost of computing: the more MIPS delivered for the money, the better the value.

mirror site – a Web site or set of files on a computer server that has been copied to another computer server to reduce network traffic, ensure better availability of the Web site or files, or make the site or downloaded files arrive more quickly for users close to the mirror site. A mirror site is an exact replica of the original site and is usually updated frequently to ensure that it reflects the content of the original site. Mirror sites are used to make access faster when the original site may be geographically distant.

MOM (message oriented middleware) – application communication middleware that sends messages between software components. Some MOM permits time-independent communication between applications. Communication, in the form of messages sent and received by applications, occurs between applications in an asynchronous mode. Applications using MOM can be deployed on multiple platforms using multiple programming languages.

monolithic application – an application in which the user interface, business rules, and data access code are combined into a single executable program and deployed on one platform. A monolithic application operates independently from other applications, performing every step of the process needed to complete the entire business function. It does not share any logic or data across system or organizational boundaries. Databases are designed for access by single application systems within a single agency, not for access by multiple application systems in multiple agencies simultaneously.

Moore's Law – The pace of microchip technology change is such that the amount of data storage that a microchip can hold doubles every year or at least every 18 months. In 1965 when preparing a talk, Gordon Moore noticed that up to that time microchip capacity seemed to double each year. The pace of change having slowed down a bit over the past few years, the definition has changed (with Gordon Moore's approval) to reflect that the doubling occurs only every 18 months. In September 1997, announcements by Intel of 2-bit flash memory and by IBM of chip circuitry of copper rather than aluminum suggested a return of the original version of Moore's Law.

mouseover – a technique using JavaScript that lets you change a Web page element (usually a graphic image) when the user rolls the mouse over something on the page (like a line of text or a graphic image)

MPEG (Moving Picture Experts Group) – a file format for multimedia files (audio and video) used on the World Wide Web

MTA (message transfer agent) – an e-mail delivery program that accepts a message from either a MUA or another MTA. The message is stored locally while the MTA determines the message's destination and delivery method.

MUA (mail user agent) – the portion of the e-mail system that directly interacts with the end user; it may exist on one machine or may be divided across multiple machines. Although the MUA configuration may change, each individual MUA consists of an e-mail front end, an e-mail server, and the sub-components of each.

multi-dimensional database – a database that stores data that is closely related, viewed, and analyzed from multiple perspectives (i.e., dimensions)

multi-homed – a computer host that has multiple IP addresses to connected networks. A multi-homed host is physically connected to multiple data links that can be on the same or different networks.

multimedia – the combined use of several media, including audio and video

multi-platform computing – computing accomplished through the use of multiple hardware and software types or operating system types

multiplexor – (1) A device that takes several input signals and combines them into a single output signal in such a manner that each of the input signals can be recovered (2) A device capable of interleaving the events of two or more activities or capable of distributing the events of an interleaved sequence to the respective activities

multi-tasking – the capability to process multiple tasks concurrently

multi-threaded – a computer hardware technology that allows a computer to process multiple simultaneous requests

multi-tier – Parts of a program can be distributed among several tiers, each located in a different computer in a network. Such a program is said to be tiered or multitiered. The 3-tier application model is probably the most common way of organizing a program in a network.

NCGOV.COM Initiative – Governor Hunt's e-government initiative, which includes PKI, credit card transactions, IT procurement, and IT enterprise management

NC @ Your Service – the logo for North Carolina's e-government portal

NC @ Your Service Project Office – the project office that oversees North Carolina's e-government portal development

NCIH (North Carolina Information Highway) – The North Carolina Information Highway provides state government entities with a broadband network for high-speed data, voice, and video. It operates within the Department of Commerce and is managed by the Office of Information Technology Services (ITS). The information highway supports the vision that all people of North Carolina will have broadband access simultaneously and efficiently for teleconferencing, high-speed data, distance learning, and multimedia applications. The NCIH project gives the state of North Carolina the advantages of broadband technology and ways to reorganize government operations to improve service, implement new services, and reduce overall costs.

NCIIN (North Carolina Integrated Information Network) – North Carolina's state-of-the-art telecommunications network. Electronic tools associated with Internet access, such as electronic mail (e-mail) and the World Wide Web (WWW), help public agencies streamline information access and conduct business. These tools are used with the NCIIN to facilitate inter-agency communication and information processing. These same tools are used for communications between public agencies and entities on the Internet, such as other government organizations, educational institutions, private businesses, and citizens.

network – (1) A configuration of data processing devices and software connected for information interchange (2) A group of nodes and the links interconnecting them (3) The physical hardware and software connections between computers. A network allows information to be shared and electronic communication to occur (4) A group of two or more computer systems linked together

network computing – computing performed on geographically dispersed platforms connected via a network; also referred to as distributed computing

NIST (National Institute of Standards & Technology) – formerly the National Bureau of Standards. NIST promotes and maintains measurement standards. It also has active programs for encouraging and assisting industry and science to develop and use these standards.

non-relational database – a database that stores a collection of data in one table. Examples of non-relational databases are VSAM databases and flat files.

non-user interface – an interface that provides services to an external application, as opposed to a user interface

NOS (network operating system) – software that is used to link files, computers, and other devices over a LAN or WAN

n-tier (some number of tiers) – a method of application development where application logic is divided into layers and is distributed among three or more separate computers in a distributed network. Business rules are implemented in distinct executable modules and are not tightly coupled with other business rules, with the code that implements the user interface, or with the code that provides data access.

N-tier programming enables ease of maintenance and flexibility in platform deployment. The most common form of n-tier is the 3-tier application, in which user interface programming is in the user's computer, business logic is in a more centralized computer, and required data is in a computer that manages a database. N-tier application structure implies the client/server program model. Where there are more than three distribution levels or tiers involved, the additional tiers in the application are usually associated with the business logic tier.

Object Management Group – a non-profit organization that promotes the theory and practice of object technology for the development of distributed computing systems

ODBC (Open Database Connectivity) driver – the middleware used to connect database access tools to relational databases through the use of a generic application program interface (API). The ODBC drivers enable access to data and provide insulation between a program and the specific RDBMS language used by each database. Database access tools and programs do not have to be customized for each database; an ODBC configuration file maintains the database connections.

OEM (original equipment manufacturer) – an equipment maker that sells products to resellers that may add value to the product, re-label it, or bundle it with their own products

office automation – the process of automating everyday business procedures

OLAP (online analytical processing) – an application system used for analysis, planning, and management reporting through interactive access to a wide variety of information. An OLAP system usually references summary data in order to process information and frequently answers business needs for "what if" scenarios.

OLTP (online transactional processing) – an application system used for online, interactive processing that performs business transactions. OLTP systems are typically used by many users simultaneously to perform data acquisition, maintenance, or retrieval.

OMG (Object Management Group) – a non-profit organization that promotes the theory and practice of object technology for the development of distributed computing systems

one-stop shop – the idea that you can accomplish all of your business needs at one place. This is the idea behind an e-government portal: a citizen should be able to access the portal and conduct all required transactions without having to visit each agency's Web site.

online transaction – an business process conducted over the Internet

Open Group, The – an international consortium of computer and software manufacturers and users dedicated to advancing multi-vendor technologies. The Open Group was formed from two previously independent groups—the Open Software Foundation (OSF) and X/Open Company Ltd. The Open Group maintains standards for the Distributed Computing Environment.

open system – a system whose characteristics comply with standards made available throughout the industry and therefore can be connected to other systems complying with the same standards

operations – coordination of system and network resources throughout an enterprise in order to support business processes

operations management – the coordination of system and network resources throughout the enterprise. Its goal is to provide reliable availability for mission critical systems. It includes job scheduling to coordinate jobs and processes in the distributed environment, fault/event management, configuration management, backup and recovery and automated software distribution.

optical storage – system storage that uses a laser optic mechanism for reading and writing data

organizational boundary – the boundary between two agencies or other state and federal organizations

OS (operating system) – software that performs basic functions on a platform, such as accepting input from the keyboard, sending output to a screen, managing files and directories on disks, and controlling other devices such as printers

OSI (Open System Interconnection) – an ISO standard for worldwide communications defining a framework for implementing protocols in seven layers. Control is passed from one layer to the next, starting at the application layer in one station, proceeding to the bottom layer, over the channel to the next station and back up the hierarchy.

OTS (off-the-shelf) – ready-made products that can easily be obtained. The term is sometimes used in military procurement specifications.

outsourcing – an arrangement in which one company provides services for another company that could also be or usually have been provided in-house. Outsourcing is a trend that is becoming more common in information technology and other industries for services that have usually been regarded as intrinsic to managing a business. In some cases, the entire information management of a company is outsourced, including planning and business analysis as well as the installation, management, and servicing of the network and workstations.

PABX (private automatic branch exchange) – an automatic telephone switching system within a private enterprise. Originally, such systems, called private branch exchanges (PBXs), required the use of a live operator. Since almost all private branch exchanges today are automatic, the abbreviation "PBX" usually implies a "PABX." Some manufacturers of PABX (PBX) systems distinguish their products from others by creating new kinds of private branch exchanges.

PAC (privilege access certificate) – a mechanism by which an authenticated client establishes a session with a server, subsystem, or application it wants to access and is permitted or denied privileges to perform activities that it might attempt

packet – a collection of data that is transmitted as a bundle across a network connection

packet switching – the process of routing and transferring data by means of addressed packets so that a channel is occupied only during transmission of a packet. On completion of the transmission, the channel is made available for transfer of other packets.

parallel processing – (1) The concurrent or simultaneous execution of two or more processes in a single unit (2) Capability to support the additional processing power needed for queries against very large relational databases

partitioning – to electronically segment or separate the hard drive of a computer or a database into different sections or components. Partitioning typically is done for performance reasons.

PDA (personal digital assistant) – any small mobile hand-held device that provides computing and information storage and retrieval capabilities for personal or business use, often for keeping schedule calendars and address book information handy. The term handheld computer is a synonym.

PDF (Portable Document Format) – a file format, developed by Adobe Systems, that captures formatting information from a variety of desktop applications, making it possible to electronically send formatted documents and have them appear on the recipient's monitor or printer in the original format.

petabyte – a measure of memory or storage capacity and is 2 to the 50th power bytes or, in decimal, approximately a thousand terabytes

physical partitioning – an application deployment method where software components of an application are physically deployed on various platforms. Physical partitioning is independent of the logical partitioning of an application.

pilot project – a project designed to test a preliminary version of an information processing system under actual but limited operating conditions and which will then be used to test the definitive version of the system

PIO (**Public Information Officer)** – The person in this position handles press releases as well as any external communication that staff of the agency creates. The PIO is also responsible for internal communications.

PIM (personal information manager) – software application akin to an appointment book that enables the user to organize personal information

PKI (public key infrastructure) – enables users of a basically unsecure public network—such as the Internet—to securely and privately exchange data and money through the use of a public and a private cryptographic key pair that is obtained and shared through a trusted authority. The public key infrastructure provides for digital certificates that can identify individuals or organizations and directory services that can store and, when necessary, revoke them.

A public key infrastructure consists of: a certificate authority (CA) that issues and verifies digital certificates; a registration authority (RA) that acts as the verifier for the certificate authority before a digital certificate is issued to a requestor; one or more directories where the certificates (with their public keys) are held (usually in an ITU X.500 standard directory); and a certificate management system.

platform – a combination of computer hardware and operating system software

platform-independent languages – high-level computer programming languages that can compile and execute programs that can be deployed on multiple platforms

PPTP (Point-to-Point Tunneling Protocol) – a protocol (set of communication rules) that allows corporations to extend their own corporate network through private "tunnels" over the public Internet. Effectively, a corporation uses a wide-area network (WAN) as a single large local area network. A company no longer needs to lease its own lines for wide-area communication but can

securely use the public networks. This kind of interconnection is known as a virtual private network (VPN).

point-to-point – pertaining to data transmission between two locations without the use of any intermediate display station or computer

policy-based networking – the management of a network so that various kinds of traffic—data, voice, and video—get the priority of availability and bandwidth needed to serve the network's users effectively. Using policy statements, network administrators can specify which kinds of service to give priority at what times of day on what parts of their Internet Protocol (IP)-based network. This kind of management is often known as Quality of Service (QoS) and is controlled using policy-based network software.

POP (point-of-presence) – the location of an access point to the Internet. A POP necessarily has a unique Internet (IP) address. Your independent service provider (ISP) or online service provider (OSP) has a point-of-presence on the Internet. POPs are sometimes used as one measure of the size and growth of an ISP or OSP. A POP may actually reside in rented space owned by a telecommunications carrier such as Sprint. A POP usually includes routers, digital/analog call aggregators, servers, and frequently frame relay or ATM switches.

POP3 (Post Office Protocol 3) – the most recent version of a standard protocol for receiving e-mail. POP3 is a client/server protocol in which e-mail is received and held for you by your Internet server. Periodically, you (or your client e-mail receiver) check your mailbox on the server and download any mail.

portability – the capability to move software across different platforms

portal – a “doorway” to the Internet. Internet portals provide a window into the information of the Internet, while enterprise portals provide a similar window into the information, systems, and processes of an enterprise. Enterprise portals typically refer to services aimed at employee productivity. The Internet portal—part guide, part home base—is now seamlessly integrated into everyday Web use, making the "doorway" concept of a portal extinct. Portals no longer only direct Web traffic but now provide value-added services from content to communication to commerce as a one-stop destination.

PostScript – Adobe’s device-independent page description/printer language. It describes type, graphics, and halftones as well as their placement on the page.

POTS (plain old telephone service) – POTS is a term sometimes used in discussion of new telephone technologies in which the question of whether and how existing voice transmission for ordinary phone communication can be accommodated. For example, ADSL and ISDN provide some part of their channels for "plain old telephone service" while providing most of their bandwidth for digital data transmission.

print server – hardware and software that manages shared printers on a network

private key – In cryptography, a private or secret key is an encryption/decryption key known only to the party or parties that exchange secret messages. In traditional secret key cryptography, communicators share a key so that each could encrypt and decrypt messages. The risk in this system is that if either party loses the key or it is stolen, the system is broken. A more recent alternative is to use a combination of public and private keys. In this system, a public key is used together with a private key.

process – (1) A standardized method of performing work that is broken down into specific or detailed tasks (2) An instance of a software program during execution

process-oriented – an adjective describing software or services that are adapted to the processes needed to complete a business function

project management – the formalized process of managing a large project, typically accomplished with the assistance of project management application software. IRM and the Enterprise Project Management Office are examples of groups that practice project management.

proprietary – an adjective that applies to a design or technique owned by a company which has not divulged specifications that would allow other companies to duplicate the product or to allow other software programs to interface with it

protocol – (1) A set of semantic and syntactic rules that determine the behavior of functional units in achieving communication (2) In System Network Architecture (SNA), the meanings of and the sequencing rules for requests and responses used for managing the network, transferring data, and synchronizing the states of network components (3) A set of special rules for communication that enable independent technology components to communicate with one another

In information technology, a protocol is the special set of rules for communicating that the end points in a telecommunication connection use when they send signals back and forth. Protocols exist at several levels in a telecommunication connection. There are hardware telephone protocols. There are protocols between the end points in communicating programs within the same computer or at different locations. Both end points must recognize and observe the protocol.

Protocols are often described in an industry or international standard. On the Internet, there are the TCP/IP protocols, consisting of: TCP (Transmission Control Protocol), IP (Internet Protocol), HTTP, FTP, and other protocols, each with defined sets of rules to use with other Internet points relative to a defined set of capabilities.

proxy server – In an enterprise that uses the Internet, a proxy server is a server that acts as an intermediary between a workstation user and the Internet so that the enterprise can ensure security, administrative control, and caching service. A proxy server is associated with or part of a gateway server that separates the enterprise network from the outside network and a firewall server that protects the enterprise network from outside intrusion.

public access – the method by which the public accesses data. Web-based application systems are frequently used to provide information to the public. In this case, an Internet application with a Web front end is developed and a search engine is used to query the data. Also, voice response units (VRUs) are implemented to support public information provided through a phone interface using a touch-tone phone.

Public Directory Service Protocol – a protocol that governs the setup and organization of directories

public key – a value provided by some designated authority as a key that, combined with a private key derived from the public key, can be used to effectively encrypt and decrypt messages and digital signatures. The use of combined public and private keys is known as asymmetric cryptography. A system for using public keys is called a public key infrastructure (PKI).

publish and subscribe – a messaging technique where one application service publishes information. Another application that needs the information subscribes to the published information (i.e., a "push" model). Messages containing the new information are placed in a queue for each subscriber by the publishing application. When a subscriber is ready to receive the new information, it checks for new messages in the message queue.

push technology – the practice or technology of having information brought to you by an intelligent agent

PVC (permanent virtual circuit) – a channel through an ATM network provisioned by a carrier between two end points, used for dedicated long-term information transport between locations

QA (quality assurance) – procedures taken to ensure that a company delivers products that conform to standards

QOS (Quality of Service) – On the Internet and in other networks, Quality of Service (QoS) is the idea that transmission rates, error rates, and other characteristics can be measured, improved, and, to some extent, guaranteed in advance. QoS is of particular concern for the continuous transmission of high-bandwidth video and multimedia information. Transmitting this kind of content dependably is difficult in public networks using ordinary "best effort" protocols.

RAD (Rapid Application Development) – a concept that products can be developed faster and of higher quality through: gathering requirements using workshops or focus groups; prototyping and early, reiterative user testing of designs; the re-use of software components; a rigidly paced schedule that defers design improvements to the next product version; and less formality in reviews and other team communication.

Some companies offer products that provide some or all of the tools for RAD software development. (The concept can be applied to hardware development as well.) These products include requirements gathering tools, prototyping tools, CASE tools, language development environments such as those for the Java platform, groupware for communication among development members, and testing tools. RAD usually embraces object-oriented programming methodology, which inherently fosters software re-use. The most popular object-oriented programming languages, C++ and Java, are offered in visual programming packages often described as providing rapid application development.

RDBMS (relational database management system) – a software system and data storage facility that organizes and manages a relational database

relational database – (1) A database in which the data are organized and accessed according to relations (2) A collection of data that is organized into related tables. Relationships are established between and among data in the tables. Data can be queried and retrieved from a relational database through the use of SQL (Structured Query Language).

replication service – a service that propagates data and transactions that occur in a central source database to each participating remote database. Replication uses a database that has been identified as a central source and reproduces the data to distributed target databases.

repository – contains metadata, or information about data or components (e.g., federated data definitions, data aliases, where OLTP and OLAP data can be found, information about reusable and shareable components, etc.). The repository serves as a primary data warehouse administration tool and helps promote data and component reusability, reliability, and sharing across the enterprise. In information technology, a repository is a central place in which an aggregation of data is kept and maintained in an organized way, usually in computer storage. Depending on how the term is used, a repository may be directly accessible to users or may be a place from which specific databases, files, or documents are obtained for further relocation or distribution in a network. A repository may be just the aggregation of data itself into some accessible place of storage or it may also imply some ability to selectively extract data. Related terms are data warehouse and data mining.

reusable component – an executable service that incorporates the logic for a single business rule or function. A component can be reused and shared between application systems.

reuse administration – a service that provides technical support for the inventory and the catalog of federated data, ensuring that the contents are sound, the systems run smoothly, necessary maintenance is performed when needed, and desirable enhancements are planned and implemented

reuse facilitation – a service that supports users and application developers in exploiting the catalog and inventory, follows a methodology of reuse, and markets the reusability program throughout the organization

reuse methodology – a consistent method for using componentware in a service-oriented architecture. The reuse methodology includes establishing an inventory, catalog, design standards, principles, quality assurance, and performance incentives.

RFI (request for information) – less formal version of RFP

RFP (request for proposal) – request to a vendor soliciting a proposal for services, hardware, software, or systems integration

ring topology – a network LAN infrastructure in which all network-connected devices are connected to one another in the shape of a closed loop. Each device is connected directly to two other devices, one on each side.

RMS (repository management system) – software that manages a repository and provides the tools to actively maintain metadata (i.e., changes to metadata occur in the repository before the changes occur in the data warehouse)

ROI (return on investment) – For a given use of money in an enterprise, the ROI is how much "return," usually profit or cost saving, results. An ROI calculation is sometimes used along with other approaches to develop a business case for a given proposal. The overall ROI for an enterprise is sometimes used as a way to grade how well a company is managed. If an enterprise has immediate objectives of getting market revenue share, building infrastructure, positioning itself for sale, or other objectives, a return on investment might be measured in terms of meeting one or more of these objectives rather than in immediate profit or cost saving.

rollout – a staged series of activities that often accumulate meaning as they occur. Computer product makers and marketers use the term to describe a series of related product announcements that are staged over time. Public relations campaigns use the term to describe the revelation of a major company theme, event, or other message over a period of time calculated to lead to ideal results. When a company installs new equipment, the installation staging is sometimes called a rollout.

router – (1) An attaching device that connects two LAN segments, which use similar or different architectures, at the reference model network layer (2) The combination of hardware and software that links LANs and WANs together

SAN (storage area network) – a networking architecture comprising separate storage networks to offload storage and backup/recovery traffic from general-purpose application networks, thereby increasing performance and manageability

SAP – SAP, started in 1972 by five former IBM employees in Mannheim, Germany, states that it is world's largest inter-enterprise software company and the world's fourth-largest independent software supplier, overall. The original SAP idea was to provide customers the ability to interact with a common corporate database for a comprehensive range of applications. Gradually, the applications have been assembled and today many corporations, including IBM and Microsoft, are using SAP products to run their own businesses.

SAP applications, built around their latest R/3 system, provide the capability to manage financial, asset, and cost accounting, production operations and materials, personnel, plants, and archived documents. The R/3 system runs on a number of platforms including Windows NT and uses the client/server model. The latest version of R/3 includes a comprehensive Internet-enabled package. SAP has recently recast its product offerings under a comprehensive Web interface, called mySAP.com, and added new e-business applications, including customer relationship management (CRM) and supply chain management.

scalability – (1) The capability for a software application to provide support to more users or a higher volume of transactions or data than the application was originally deployed to support (2) The ability to quickly meet demands for increased performance: processing power, network connectivity, or data storage. In information technology, scalability seems to have two uses.

(A) It is the ability of a computer application or product (hardware or software) to continue to function well as it (or its context) is changed in size or volume in order to meet a user need. Typically, the rescaling is to a larger size or volume. The rescaling can be of the product itself (for example, a line of computer systems of different sizes in terms of storage, RAM, and so forth) or in the scalable object's movement to a new context (for example, a new operating system).

(B) It is the ability not only to function well in the rescaled situation, but also to actually take full advantage of it. For example, an application program would be scalable if it could be moved from a smaller to a larger operating system and take full advantage of the larger operating system in terms of performance (user response time and so forth) and the larger number of users that could be handled. It is usually easier to have scalability upward rather than downward since developers often must make full use of a system's resources (for example, the amount of disk storage available) when an application is initially coded. Scaling a product downward may mean having to achieve the same results in a more constrained environment.

scheduling and calendaring – a technology that provides, by combining with an organization's overall groupware system(s), a methodology for coordination and communications of individual and group activities and plans

security – protection of the physical, intellectual, and electronic assets of an enterprise, including its security policies, network access controls, virus protection, network administration, and workstation security

security services – risk assessment and protection of the physical, intellectual, and electronic assets of an enterprise, including security policies, network access, virus protection, firewalls, NOS administration and workstation security

SEI (Software Engineering Institute) – founded by the U.S. Department of Defense to advance the practice of software engineering

server – (1) A functional unit that provides shared services to workstations over a network, for example, a file server, a print server, a mail server (2) In TCP/IP, a system in a network that handles the requests of a system at another site, called a client/server (3) Software that provides functionality that can be requested by other software (4) A platform on which software executes. Server hardware is often referred to by the type of software that executes on it, such as "application server" or "database server," or by the operating system that it executes, such as "HP server" or "Novell Server."

service – (1) Functionality that can be requested by a software component (2) A software component that provides functionality that can be requested by other software

service broker – a generic middleware interface for application communication. Common middleware services are combined together and a single API is provided to meet inter-application communication needs.

service-oriented – an adjective describing software or services that are adapted to provide a service

SGML (Standard Generalized Markup Language) – international standard way of identifying the basic structural elements of a text document. SGML addresses only the structure of a document, not its format or presentation.

signature file – a short text file you create for use as a standard appendage at the end of your e-mail notes or Usenet messages. For example, you might include your full name, occupation or position, phone number, fax number, e-mail address, and the address of your Web site if you have one. Many people also include a favorite quote, company motto, or short personal statement.

Most e-mail and Usenet news facilities make it possible for you to either create the signature file as part of the application or to specify another file you've created with a word processor. Then, you tell the facility (usually in an "Options" menu) the name of your signature file and it automatically adds it to the note or message template it provides you.

SLA (service-level agreement) – (1) An agreement among two or more parties that establishes measurable levels of service and expectations for that service (2) An agreement between end users and the help desk defining the boundaries of acceptable service and details the associated fees for help desk services rendered. The SLA defines users' expectations and serves as a guidepost for establishing and measuring performance goals.

smart card – in computer security, a credit card-sized device containing an embedded microprocessor that stores information. The smart card can be loaded with data, used for telephone calling, electronic cash payments, and other applications, and then periodically "recharged" for additional use.

SMTP (Simple Mail Transfer Protocol) – the standard transport protocol for sending messages from one mail transfer agent (MTA) to another MTA over the Internet. Using MIME encoding, it enables the transfer of text, video, multimedia, images, and audio attachments through e-mail messages.

SNA (System Network Architecture) – The framework, designed by IBM, which defines the structuring of data-communications functions and protocols of the mainframe, including networking protocols, administration software, and hardware devices that provide physical delivery of those protocols. It enables reliable transfer of data among end users and provides protocols for controlling the resources of various network configurations. The SNA network consists of network accessible units (NAUs), boundary function, gateway function, and intermediate session routing function components; and the transport network.

SNADS (Systems Network Architecture Distribution Services) – the SNADS gateway is an e-mail gateway that moves and translates messages between an IBM SNADS environment and the state's standard Simple Mail Transfer Protocol (SMTP) mail backbone

SNMP (Simple Network Management Protocol) – a set of network communication specifications covering all the basics of network management. It is a simple and expandable protocol designed to give the capability to remotely manage a computer network by polling, setting terminal values, and monitoring network events.

sockets – a name given to the package of subroutines that provide access to TCP/IP on most systems

software – all or part of the programs, procedures, rules, and associated documentation of a data processing system. Software is an intellectual creation that is independent of the medium on which it is recorded.

software distribution – the process of propagating software installation, upgrades, and maintenance to each workstation that needs it

SONET (Synchronous Optical Network) – (1) A new and growing body of standards that define all aspects of transporting and managing digital traffic over fiber-optic facilities in the public network (2) A network communication technology offering fiber optic transmission system for high-speed digital traffic

SPOC (single point of contact) – A methodology that allows an end user to make one attempt at contacting an organization for service, then having the request channeled by some automated means to the group that can best service the user's need.

SQL (Structured Query Language) – a non-proprietary method for querying and retrieving data from a relational database. The industry standard for SQL is ANSI Standard SQL. Vendors may add extensions to the SQL language for their proprietary databases. A sample SQL statement is:

SELECT CUSTOMER, ADDRESS, PHONE_NUMBER FROM CLIENT_DATAWHERE LAST_NAME="SMITH" ORDER BY FIRST_NAME.

SSL (Secure Sockets Layer) – a transport-level technology for authentication and data encryption between a Web browser and a Web server

SSO (single sign-on) – single-password access to multiple systems

stand-alone – pertaining to operation that is independent of any other device, program, or system

stand-alone workstation – a computer workstation where the computer is not connected to any other computer on a network. It can neither send nor receive files or information electronically from any other computer without the use of a diskette.

star topology – a network LAN infrastructure in which each node is connected to a central hub

sticky – the ability to keep a user at a particular Web site

storage management – a set of policies and operational procedures required to maintain disk, tape, and optical storage media

store and forward – a messaging technique where messages are stored in a message queue and forwarded to a software service as needed. Store and forward messaging is similar to doing business through voice mail. The voice mailbox is the queue. Incoming calls are retrieved when it is convenient, they are prioritized, and calls are returned at a convenient time.

stovepiped – generally refers to components that have poor integration capabilities

summary data – high-level data representing a summary of detailed data, such as totals, year-to-date information, etc.

support services – a classification for the operating system components of a service-oriented architecture, such as printing, faxing, and imaging

synchronous processing – a method of communication that requires an immediate response before the requester can continue processing

systems integration – the progressive assembling of system components into a whole system

system management – the process for managing and supporting the enterprise-wide technical architecture with primary emphasis on centrally managing distributed systems at geographically disbursed sites. Resources managed include the systems, databases, applications, networks, and Internet components necessary to conduct the automated business functions of the state.

tape storage – a magnetic storage in which data are stored by magnetic recording on the surface of a tape that moves longitudinally in use

TCO (total cost of ownership) – how much it actually costs to own a PC. The TCO includes the original cost of the computer and software, hardware and software upgrades, maintenance, technical support, and training. Most estimates place the TCO at about three to four times the actual purchase cost of the PC. The TCO has become a rallying cry for companies supporting network computers. They claim that not only are network computers less expensive to purchase, but the TCO is also much less because network computers can be centrally administered and upgraded.

TCP (Transmission Control Protocol) – a communication protocol responsible for verifying the correct delivery of data from platform to platform. TCP adds support to detect errors or lost data and to trigger re-transmission until the data is correctly and completely received.

TCP/IP (Transmission Control Protocol/Internet Protocol) – (1) A set of communication protocols that support peer-to-peer connectivity functions for both local and wide area networks

(2) Low-level network transport protocols developed to allow cooperating computers to share resources across a network.

technical architecture – a framework for making decisions about information systems implementation and the supporting infrastructure. It is designed to establish consistency, promote resource sharing, reduce duplication of effort, and improve the state's ability to benefit from the economies of scale.

technical architecture standards – the national, international, and industry standards that support the architecture, in addition to the standards necessary for current operations

telecommunications – (1) The transmission of control signals and information between two or more locations, such as by telegraph, radio, or television (2) The transmission of data between two computer systems over telecommunication lines and between a computer system and remote devices

Telnet – the network terminal protocol allowing a user to log in on any other computer on a TCP/IP network

terabyte – a measure of computer storage capacity that is 2 to the 40th power or, in decimal, approximately a thousand billion bytes (that is, a thousand gigabytes)

terminal – (1) A point in a system or communication network at which data can either enter or leave (2) A device, usually equipped with a keyboard and display device, capable of sending and receiving information. **Note:** The terms terminal and workstation are often used interchangeably. However, a terminal may not have a human operator, whereas a workstation is at least a terminal (often a PC) where a human operator performs an application.

thin client – a two-tier client/server model for application design in which most of the computer code is executed on a server and the client process is limited to the software that provides the user presentation only. It provides simplified system management because there is little or no business application code distributed across multiple workstations.

third-party – an adjective describing an item or service that is available from an outside vendor

third party – a noun describing a person, group, or business outside of your organizational structure

thread – internal system structure that describes an application’s connection existence and specifies its accessibility to resources and services. Operating systems, relational databases, and transaction monitors all employ the concept of threads.

three-tier – a client/server application in which the code that implements the business rules is monolithic but is separate and distinct from the code that implements the user interface and the code that implements data access

tier – an executable software component comprising one partition of an application. A tier typically performs a complete business function. **Note:** The number of tiers in an application does not necessarily refer to the number of platforms on which an application is deployed.

TIFF (Tagged Image File Format) – a file format for storing images on a computer

token ring – A local area network (LAN) in which all computers are connected in a ring or star topology and a bit- or token-passing scheme is used to prevent the collision of data between two computers that want to send messages at the same time. The token ring protocol is the second most widely used protocol on local area networks after Ethernet. The IBM Token Ring protocol led to a standard version, specified as IEEE 802.5. Both protocols are used and are very similar. The IEEE 802.5 token ring technology provides for data transfer rates of either 4 or 16 megabits per second.

top-level domain – the portion of a Uniform Resource Locator (URL) or Internet address that identifies the general type of Internet domain, such as "com" for "commercial," "edu" for "educational," “gov” for “government”, and so forth.

TP (transaction processing) monitor – application communication middleware that manages distributed transactions

tps (transactions per second) – metric used in evaluating OLTP system performance, typically measured under conditions of a specified response time

traffic filtering – the ability to reduce the amount of data flowing across a network by identifying common data patterns and programmatically preventing data containing those patterns from traveling across the network

transaction – a process that performs a single automated function, for example, a renew vehicle registration transaction

transformation engine – software designed to prepare data from multiple operational databases for a data warehouse. A transformation engine provides an alternative to developing, maintaining, and running data extraction and transformation processing on production application systems. The data preparation occurs asynchronously.

TS (Telecommunications Services) – a section within ITS which provides and maintains all state telephone products and services and oversees the NC Integration Network (NCIIN). Specifically, TS provides computer network services (WAN, SNA), voice services (telephone, cellular, VRU), transport network services (digital backbone, long distance, credit cards, and video and advanced network services (two-way interactive, high speed data).

TSR (terminate and stay resident) – DOS program that is loaded into memory to extend the functionality to the operating system

tunneling – Relative to the Internet, tunneling is using the Internet as part of a private secure network. The "tunnel" is the particular path that a given message or file might travel through the Internet. A protocol or set of communication rules called Point-to-Point Tunneling Protocol (PPTP) has been proposed that would make it possible to create a virtual private network (VPN) through "tunnels" over the Internet. This would mean that companies would no longer need their own leased lines for wide-area communication but could securely use the public networks.

two-tier – a client/server application in which the code that implements the business rules is monolithic and is tightly coupled to either the code that implements the user interface or to the code that implements data access

UI (user interface) – a manner of presentation allowing applications to communicate with people. User interfaces include graphical user interfaces (GUIs), terminal or character-based interfaces, VRUs, and credit card readers.

UPS (uninterruptible power supply) – a device that allows your computer to keep running for at least a short time when the primary power source is lost. It also provides protection from power surges. A UPS contains a battery that "kicks in" when the device senses a loss of power from the primary source. If you are using the computer when the UPS notifies you of the power loss, you have time to save any data you are working on and exit gracefully before the secondary power source (the battery) runs out. When all power runs out, any data in your computer's random access memory (RAM) is erased. When power surges occur, a UPS intercepts the surge so that it doesn't damage your computer. Software is available that automatically backs up (saves) any data that is being worked on when nthe UPS becomes activated.

URL (Uniform Resource Locator) – a URL is the address of a file (resource) accessible on the Internet. The type of resource depends on the Internet application protocol. Using the World Wide Web's protocol, the Hypertext Transfer Protocol (HTTP), the resource can be an HTML page, an image file, a program such as a CGI application or Java applet, or any other file supported by

HTTP. The URL contains the name of the protocol required to access the resource, a domain name that identifies a specific computer on the Internet, and a hierarchical description of a file location on the computer. An example of an URL is: http://www.its.state.nc.us.

user – an active participant, person, or thing using a computer, computer program, or services of an enterprise

user authentication – application security code that requires both a user name and password to ensure that a user requesting access to a secured system or application is an authorized user

user authorization – a security feature that identifies specific end users, by user ID, as having the authority to use or access an application or system

user interface – a manner of presentation allowing applications to communicate with people. User interfaces include graphical user interfaces (GUIs), terminal or character-based interfaces, voice recognition units (VRUs), and credit card readers

VAN (virtual area network) – a network on which users are enabled to share a more visual sense of community through high bandwidth connections. As conceived by PennWell Media Online, a virtual area network is something like a metropolitan area network (MAN) or extended local area network (LAN) in which all users can meet over high-bandwidth connections, enabling "face-to-face" online "coffeehouses," remote medical diagnosis and legal consultation, and online corporate or extra-corporate workgroups, focus groups, and conferences.

A VAN requires multi-megabyte data flow and can be implemented through the use of ADSL but more likely through the installation of cable modems. Since the high-bandwidth connections imply a common infrastructure, the first VANs are likely to be local or regional. However, a VAN can also be national or international in geographic scope, assuming all users share similar capabilities.

Vantive – the customer support system software used by ITS

vCalendar – an industry standard format for exchanging scheduling and activity-recording information electronically. If someone sends you their week's schedule in a vCalendar attachment to an e-mail note, you can drag-and drop it (or otherwise move it) to a personal information manager (PIM) type of application program and integrate with or relate it to your own schedule. vCalendar was developed along with the vCard electronic business card specification.

vCard – an electronic business (or personal) card and also the name of an industry specification for the kind of communication exchange that is done on business or personal cards. You may have seen a vCard attached to an e-mail note someone has sent you. Because vCard is a published industry specification, software application developers can create programs that process vCards by letting you view them, or drag-and-drop them to an address book or some other application. vCards can include images and sound as well as text.

VDC (virtual data center) – a concept encouraging the development of standard network configurations that are deployed locally but managed centrally. A VDC allows central management of multiple instances of network configurations at remote sites and behaves as if they were on the same data center floor.

version control – the process of controlling, maintaining, and documenting maintenance and updates to computer software programs

vertical market – a particular industry or group of enterprises in which similar products or services are developed and marketed using similar methods (and to whom goods and services can be sold). Broad examples of vertical markets are insurance, real estate, banking, heavy manufacturing, retail, transportation, hospitals, and government.

vertical market software – software aimed at a particular vertical market. It can be contrasted with horizontal market software (such as word processors and spreadsheet programs) that can be used in a cross-section of industries.

video conferencing – a meeting that has active participants who are at geographically dispersed locations. Communication occurs through online audio and video technology.

VIM (vendor independent messaging) – an application program interface (API) developed by Lotus Development Corporation that provides cross-platform support for e-mail applications

VLDB (very large database) – a database that contains 50 million rows or more. A VLDB requires special handling in order to maintain an acceptable level of performance.

voice mail – the use of computers to alert recipients that recorded telephone messages are waiting

VPN (virtual private network) – a private data network that makes use of the public telecommunication infrastructure, maintaining privacy through the use of a tunneling protocol and security procedures. A virtual private network can be contrasted with a system of owned or leased lines that can only be used by one company. The idea of the VPN is to give the company the same capabilities at much lower cost by using the shared public infrastructure rather than a private one. Phone companies have provided secure shared resources for voice messages. A virtual private network makes it possible to have the same secure sharing of public resources for data. Companies today are looking at using a private virtual network for both extranets and wide-area intranets.

VRU (voice response units) – an interface that allows users to communicate with an application via a telephone

W3C (The World Wide Web Consortium) – The W3C is an industry consortium that seeks to promote standards for the evolution of the Web and interoperability between WWW products by producing specifications and reference software. Although W3C is funded by industrial members, it is vendor-neutral and its products are freely available to all. The Consortium is international; jointly hosted by the MIT Laboratory for Computer Science in the United States and in Europe by INRIA, who provide both local support and performing core development. The W3C was initially established in collaboration with CERN, where the Web originated, and with support from DARPA and the European Commission.

WAN (wide area network) – a network that provides communication services to a geographic area larger than that served by a local area network or a metropolitan area network and that may use or provide public communication facilities. A WAN typically consists of multiple LANs that are linked together.

WAP (Wireless Application Protocol) – The WAP is a specification for a set of communication protocols to standardize the way that wireless devices, such as cellular telephones and radio transceivers, can be used for Internet access, including e-mail, the World Wide Web, newsgroups, and Internet Relay Chat (IRC).

While Internet access has been possible in the past, different manufacturers have used different technologies. In the future, devices and service systems that use WAP will be able to interoperate. The WAP layers are Wireless Application Environment (WAE), Wireless Session Layer (WSL), Wireless Transport Layer Security (WTLS), and Wireless Transport Layer (WTP).

WBEM (Web-based Enterprise Management) – an initiative focused on developing a set of enterprise systems management standards based on Internet technology. The Web-based approach enables enterprises to manage any component of their infrastructure in a distributed computing environment, as well as value-added applications built by any third party from a central location via Internet communications and web browsers.

Web accessibility – the ability of users to access information from a Web site, regardless of any limitation they may have. W3C has issued guidelines for designing Web-accessible Web sites.

Web browser – a software application used to locate and display Web pages from Web sites on the Internet

Web hosting – also known as Web site hosting; the business of housing, serving, and maintaining files for one or more Web sites

Web page – an electronic document stored in HTML format that is accessible through a Web site

Web site – an electronic collection of Web pages accessible through an intranet in an organization or through the Internet on the World Wide Web. The initial connection to a Web site is through a home page. The Web site may contain links to other Web pages or sites.

white paper – an article that states an organization's position or philosophy about a social, political, or other subject, or a not-too-detailed technical explanation of an architecture, framework, or product technology. Typically, a white paper explains the results, conclusions, or construction resulting from some organized committee or research collaboration or design and development effort.

In information technology, a white paper is often a paper written by a lead product designer to explain the philosophy and operation of a product in a marketplace or technology context. Many, if not most, Web sites for software products include a white paper in addition to a frequently asked questions (FAQ) page and more detailed product specifications.

In government, a white paper is often a policy or position paper. The U.S. Government's June 1998 policy statement on the Management of Internet Names and Addresses (known generally as "The White Paper") is an example of great interest to many Internet users.

wireless – Wireless refers to a communications, monitoring, or control system in which electromagnetic or acoustic waves carry a signal through atmospheric space rather than along a wire. In most wireless systems, radio frequency (RF) or infrared (IR) waves are used. Some monitoring devices, such as intrusion alarms, employ acoustic waves at frequencies above the range of human hearing.

wireless LAN – New high-bandwidth allocation for wireless LANs will make possible a relatively low-cost wiring of classrooms in the United States. A similar frequency allocation has been made in Europe. With a wireless LAN, a mobile user can connect to a local area network (LAN) through a radio connection.

WML (Wireless Markup Language) – WML, formerly called HDML (Handheld Devices Markup Language), is a language that allows the text portions of Web pages to be presented on cellular phones and personal digital assistants (PDAs) via wireless access. WML is part of the Wireless Application Protocol (WAP) that is being proposed by several vendors to standards bodies. The Wireless Application Protocol works on top of standard data link protocols, such as GSM, CDMA, and TDMA, and provides a complete set of network communication programs comparable to and supportive of the Internet set of protocols.

WML is an open language offered royalty-free. Specifications are available at Phone.com's Web site. According to Phone.com, any programmer with working knowledge of HTML, CGI scripts, and SQL queries should be able to write a presentation layer using WML. A filter program can be written or may be available from a vendor that will translate HTML pages into WML pages.

wrapper – In information technology, a wrapper is data that precedes or frames the main data or a program that sets up another program so that it can run successfully. On the Internet, "http://" and "ftp://" are sometimes described as wrappers for the Internet addresses or URLs (Uniform Resource Locators) that follow. Bracketing symbols (such as < >) are sometimes referred to as wrappers.

In programming, a wrapper is a program or script that sets the stage and makes possible the running of another, more important program. In data transmission, a wrapper is the data that is put in front of or around a transmission that provides information about it and may also encapsulate it from view to anyone other than the intended recipient. A wrapper often consists of a header that precedes the encapsulated data and the trailer that follows it. In database

technology, a wrapper can be used to determine who has access to look at or change the data that is wrapped.

WWW (World Wide Web) – the integrated worldwide network of computers based on the Hypertext Transfer Protocol (HTTP) and Transmission Control Protocol/Internet Protocol (TCP/IP), commonly used to bring information to computer users via a client browser program

WYSIWYG (what you see is what you get) – refers to a screen image that presents exactly that which will appear when the system is run or when the document or screen is printed

X.25 – The CCITT protocol standard for connecting to packet-switched networks, typically used to connect wide area networks (WANs), packet switching breaks network data into smaller packets and sends the packets from point to point through interconnected switches. The X.25 protocol, adopted as a standard by the Consultative Committee for International Telegraph and Telephone (CCITT), is a commonly used network protocol. The X.25 protocol allows computers on different public networks (such as CompuServe, Tymnet, or a TCP/IP network) to communicate through an intermediary computer at the network layer level. X.25's protocols correspond closely to the data-link and physical-layer protocols defined in the Open Systems Interconnection (OSI) communication model.

X.400 – The ISO/CCITT mail transfer protocol standard. X.400 is the messaging (notably e-mail) standard specified by the ITU-TS (International Telecommunications Union - Telecommunication Standard Sector). It's an alternative to the more prevalent e-mail protocol, SMTP. X.400 is common in Europe and Canada. It's actually a set of standards, each in the 400-number range. Because X.400 stipulates a number of possible address characteristics that SMTP does not, an X.400 address can be long and cumbersome. On the other hand, X.400 adherents note that it is an official standard whereas SMTP is a "de facto" standard. Thus, products with X.400 implementations can be tested more rigorously than products with SMTP implementations can. X.400 offers more capabilities than SMTP does. However, many of these capabilities are seldom used.

X.500 Directory Service – the ISO/CCITT directory service protocol standard. X.500 Directory Service is a standard way to develop an electronic directory of people in an organization so that it can be part of a global directory available to anyone in the world with Internet access. Such a directory is sometimes called a global White Pages directory. The idea is to be able to look up people in a user-friendly way by name, department, or organization. Many enterprises and institutions have created an X.500 directory. Because these directories are organized as part of a single global directory, you can search for hundreds of thousands of people from a single place on the World Wide Web.

The X.500 directory is organized under a common "root" directory in a "tree" hierarchy of: country, organization, organizational unit, and person. An entry at each of these levels must have certain attributes; some can have optional ones established locally. Each organization can implement a directory in its own way as long as it adheres to the basic schema or plan. The distributed global directory works through a registration process and one or more central places that manage many directories. Providing an X.500 directory allows an organization to make it and selected members known on the Internet.

XHTML (Extensible Hypertext Markup Language) – a reformulation of HTML 4 as an application of the Extensible Markup Language (XML). For readers unacquainted with either term, HTML is the set of codes (that's the "markup language") that a writer puts into a document to make it displayable on the World Wide Web. HTML 4 is the current version of it.

XML is a structured set of rules for how one might define any kind of data to be shared on the Web. It's called an "extensible" markup language because anyone can invent a particular set of markup for a particular purpose. As long as everyone uses it (the writer and an application program at the receiver's end), it can be adapted and used for many purposes—including describing the appearance of a Web page. That being the case, it seemed desirable to reframe

HTML in terms of XML. The result is XHTML, a particular application of XML for "expressing" Web pages.

X/Open – an organization that creates and promotes standards for vendor-neutral application program interfaces. The standard is called common applications environment (CAE) and contains specifications for GUIs, data access, and networks.

X/Open API – a standard application programming interface between distributed transaction processing monitors and database management systems

X/Open TX – a standard defined by the X/Open Company Ltd. (now known as The Open Group). X/Open TX standard defines transactions through a distributed transaction processing monitor.

X/Open XA – a standard defined by the X/Open Company Ltd. (now known as The Open Group). X/Open XA specification defines specifications for two-phase commits that work with distributed databases in a distributed transaction processing monitor environment.

X/Open XATMI – a standard defined by the X/Open Company Ltd. (now known as The Open Group). X/Open X/ATMI provides a standard transaction management interface.

XML (Extensible Markup Language) – a flexible way to create common information formats and share both the format and the data on the World Wide Web, intranets, and elsewhere. For example, computer makers might agree on a standard or common way to describe the information about a computer product (processor speed, memory size, and so forth) and then describe the product information format with XML. Such a standard way of describing data would enable a user to send an intelligent agent (a program) to each computer maker's Web site, gather data, and then make a valid comparison.

Any individual, group, or group of companies who want to share information in a consistent way can use XML. It is "extensible" because, unlike HTML, the markup symbols are unlimited and self-defining. XML is actually a simpler and easier-to-use subset of the Standard Generalized Markup Language (SGML), the standard for how to create a document structure. It is expected that HTML and XML will be used together in many Web applications.